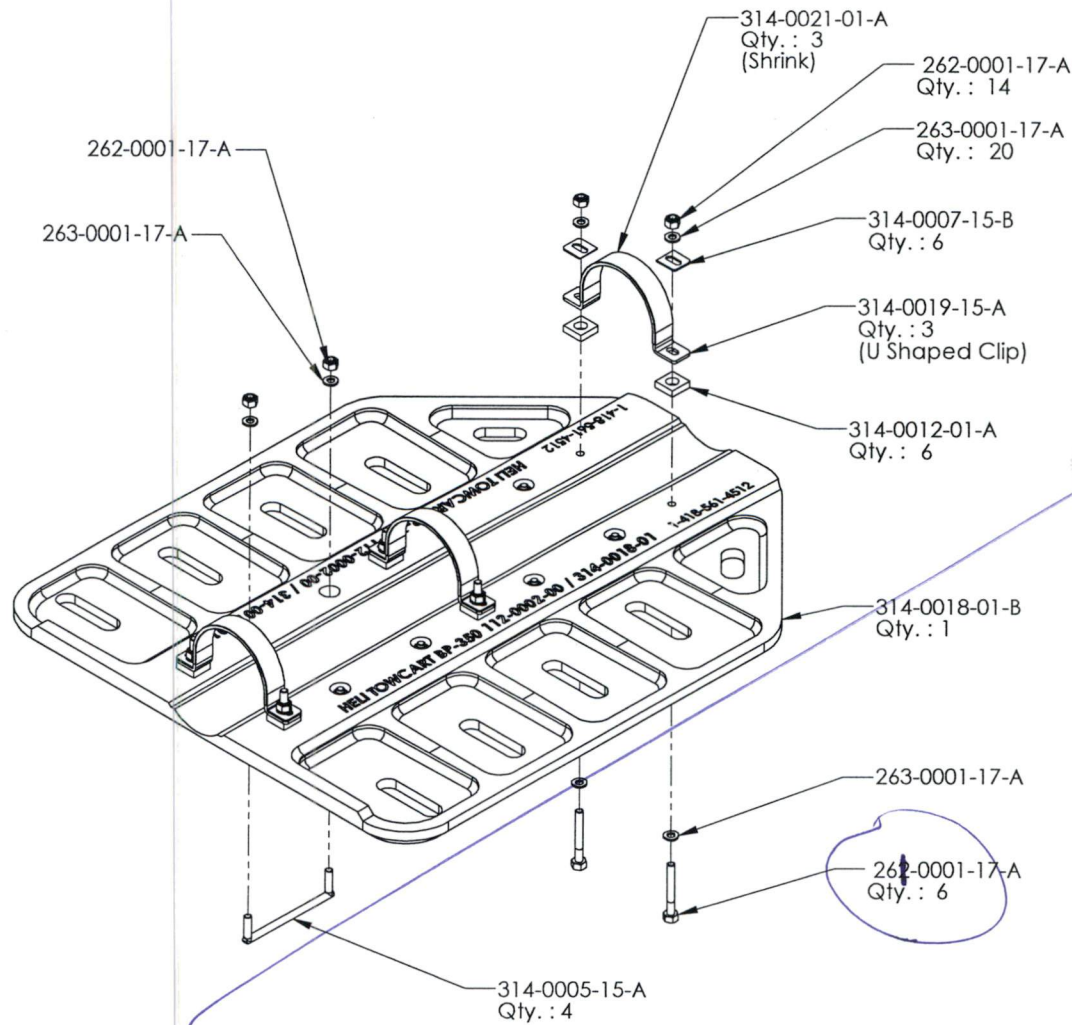
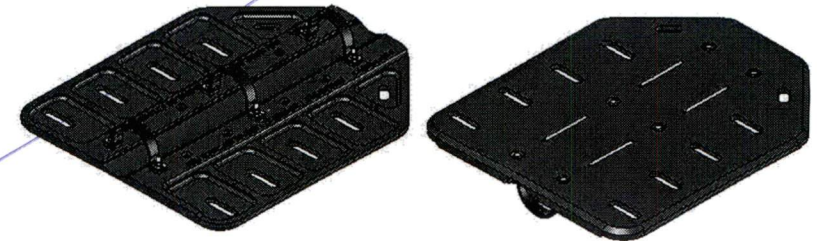


A : GUYANME
1 PAGE

DE: NATHAN.



No.	Qty.	Description	Part #	Rev #
1	1	Bearpaw BP-350 - Pad	314-0018-01	B
2	3	Bearpaw BP-350 - U shaped clip	314-0019-15	A
3	3	Bearpaw BP-350 - Shrink 1" x 6 1/4"	314-0021-01	A
4	6	Bearpaw - Slotted clip support	314-0007-15	B
5	6	Bearpaw - Filler Block 1/4"	314-0012-01	A
6	4	Bearpaw - Iceblade Assembly	314-0005-15	A
7	6	Bolt AN4-70A 19A	262-0001-17	A
8	20	Washer AN960-416	263-0001-17	A
9	14	Nut MS20365-428	262-0001-17	A



Note : Iceblade assembly can be omitted from installation (Optional)

Rev.	Description	Date	By
B	Change bolt size	20-nov.-06	G.L.
A	Initial Issue	29-sept.-06	G.L.

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		Title / Titre: Bearpaw BP-350 - Assembly			
Dessiné par / Drawing by: G.Lapointe	Date: (mm/dd/yyyy) 11/20/2006	Format: B	Echelle / Scale: 1:4	# Page: 1	
Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Dessin # / Drawing #: 112-0002-00	Rev #: B		
Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #: 112-0002-00	Rev #: B		

A : BUILAUME LAPOINTE

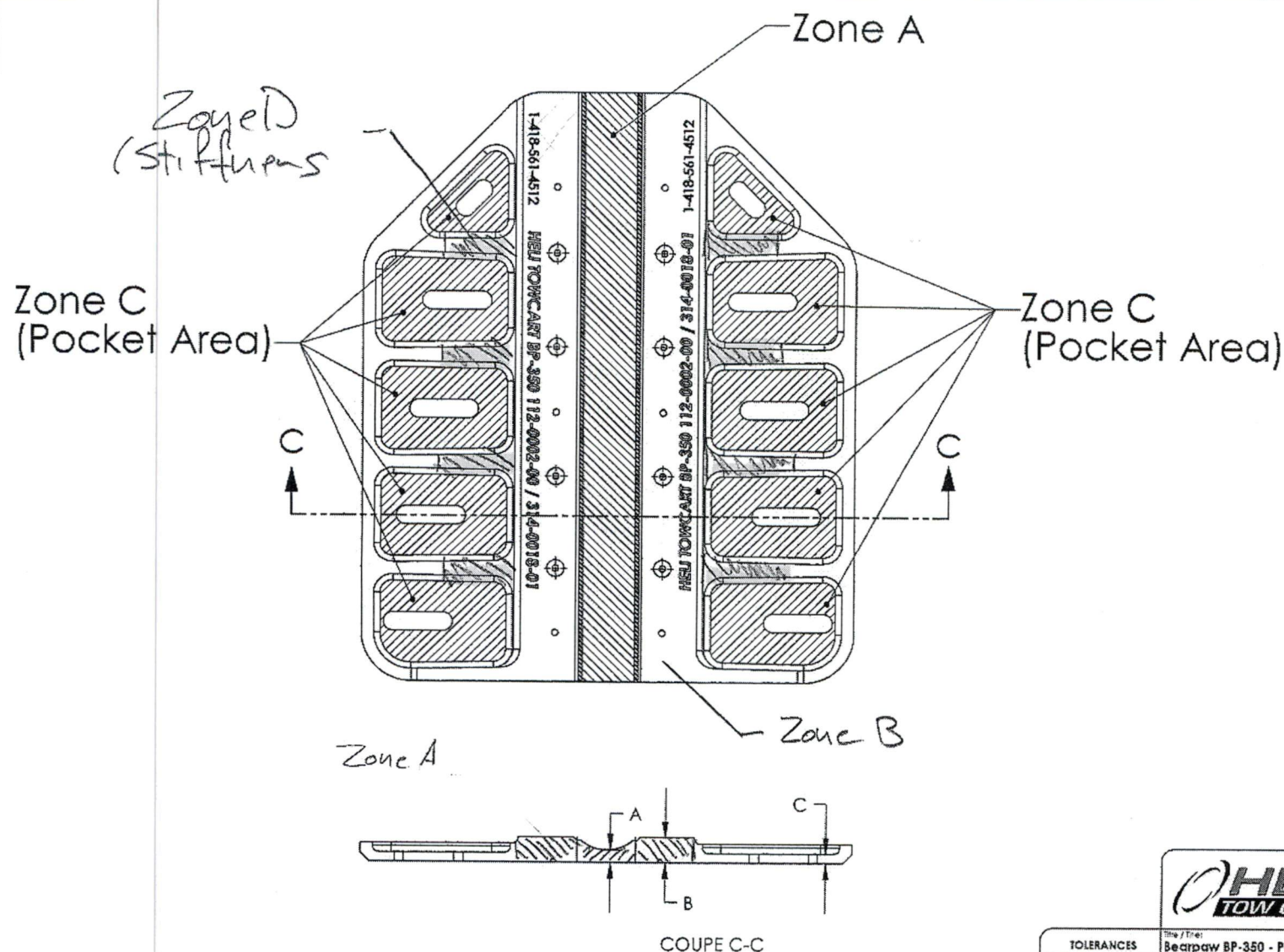
X : 878-2536

17. 11. 2006

2 PAGES, (TEL QUE MENTIONNÉ AU COURRIEL.)

DE : NATHALIE BARBEAU

P 1/2



HELI
TOW CART

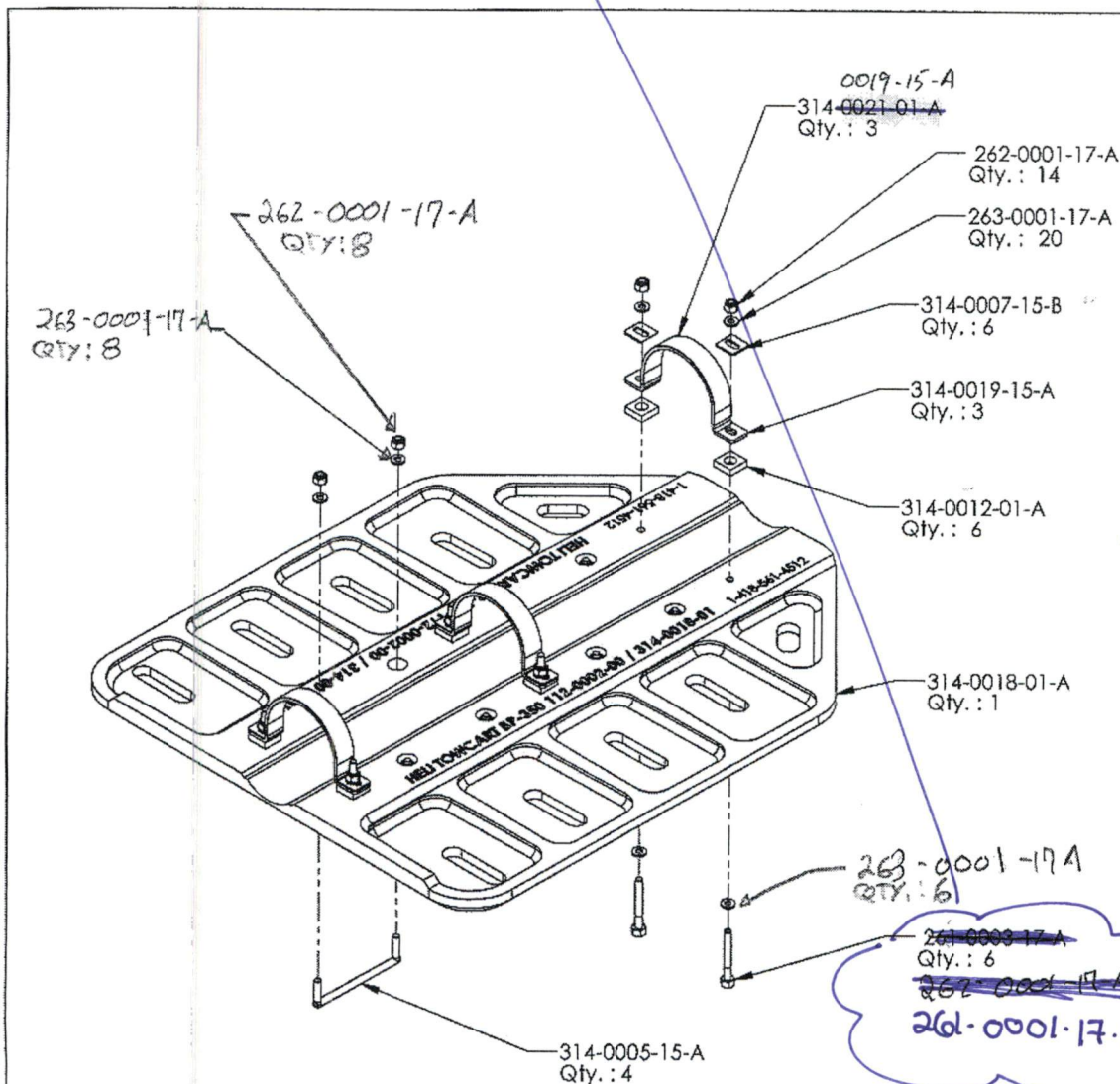
Vanair Inc.
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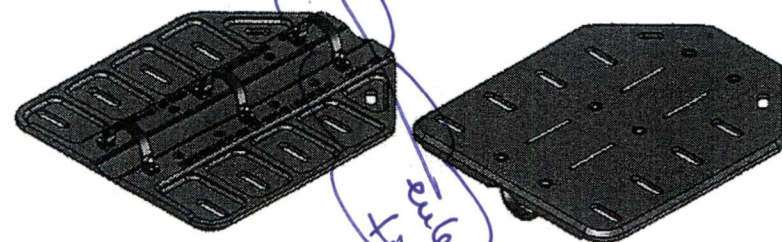
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XX	± 1/64"	Designé par / Drawing by: G. Lapointe		Echelle / Scale: 1:4		
XXX	± 0.01"	Date: (mm/dd/yyyy) 10/8/2006		# Pages: 2 / 2		
XXX	± 0.005"	Vérifié par / Checked by: Date: (mm/dd/yyyy)		Dessiné / Drawing #: VNR106		
Approuvé par / Approved by: Date: (mm/dd/yyyy)		Fiche # / Part #: 314-0018-01		Rev B: R02		
ANGLES ± 1° Finish				Rev A: A		

(TO DO IF ADDITION NEWELAS, voir ABCD, E)

P. 2/2



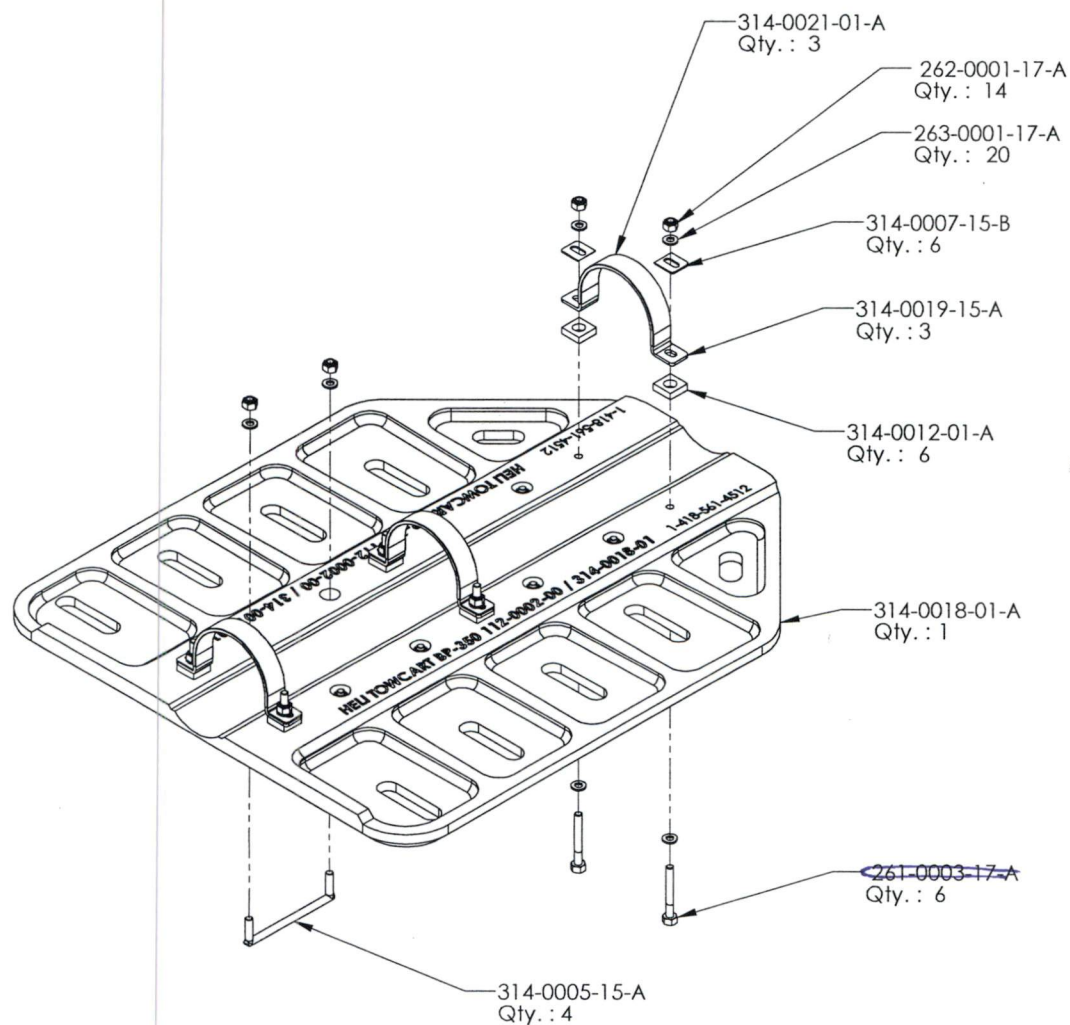
No.	Qty.	Description	Part #	Rev #
1	1	Bearpaw BP-350 - Pad	314-0018-01	A
2	3	Bearpaw BP-350 - U shaped clip	314-0019-15	A
3	3	Bearpaw BP-350 - Shrink 1" x 6 1/4"	314-0021-01	A
4	6	Bearpaw - Slotted clip support	314-0007-15	B
5	6	Bearpaw - Filler Block 1/4"	314-0012-01	A
6	4	Bearpaw - Iceblade Assembly	314-0005-15	A
7	6	Bolt AN4-16A AN4-16A	261-0003-17	A
8	20	Washer AN960-416 AN4-14A	263-0001-17	A
9	14	Nut M820x365-428	262-0001-17	A



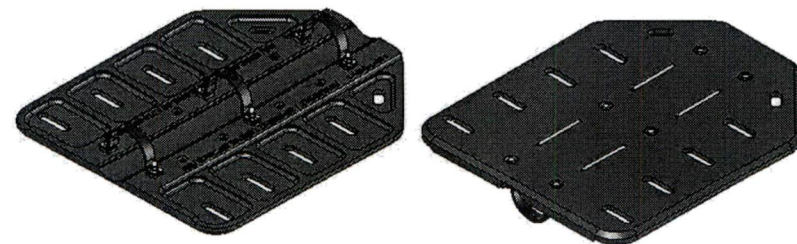
Note : Iceblade assembly can be omitted from installation (Optional)

Rev.	Description	Date	By
R01	Initial Issue	29-sept-06	G.L.

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Title / Titre: Bearpaw BP-350 - Assembly					
Dessiné par / Drawing by: G. Lapointe	Date: (mm/dd/yyyy): 10/3/2006	Format: B	Échelle / Scale: 1:4	Page: 1	
Vérifié par / Checked by:	Date: (mm/dd/yyyy):	Dessin # / Drawing #: 112-0002-00	Rev #: 1		
Approuvé par / Approved by:	Date: (mm/dd/yyyy):	Piece # / Part #: 112-0002-00	Rev #: 1		



No.	Qty.	Description	Part #	Rev #
1	1	Bearpaw BP-350 - Pad	314-0018-01	A
2	3	Bearpaw BP-350 - U shaped clip	314-0019-15	A
3	3	Bearpaw BP-350 - Shrink 1" x 6 1/4"	314-0021-01	A
4	6	Bearpaw - Slotted clip support	314-0007-15	B
5	6	Bearpaw - Filler Block 1/4"	314-0012-01	A
6	4	Bearpaw - Iceblade Assembly	314-0005-15	A
7	6	Bolt ANA 16A 14A	261-0003-17	A
8	20	Washer AN960-416	263-0001-17	A
9	14	Nut MS20-365-428	262-0001-17	A



Note : Iceblade assembly can be omitted from installation (Optional)

R01	Initial Issue	29-sept.-06	G.L.
Rev.	Description	Date	By

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Titre / Title: Bearpaw BP-350 - Assembly			
Dessiné par / Drawing by: G. Lapointe		Date: (mm/dd/yyyy) 10/3/2006	
Vérifié par / Checker by:		Date: (mm/dd/yyyy)	
Approuvé par / Approved by:		Date: (mm/dd/yyyy)	
Matériel / Material:		Echelle / Scale: 1:4	
Format: B		# Page: 1	
Dessin # / Drawing #: 112-0002-00		Rev #: R01	
Pièce # / Part #: 112-0002-00		Rev #: A	

Nathalie Barbeau

From: Nathalie Barbeau [nbarbeau@helitowcart.com]

Sent: October 3, 2006 5:39 PM

To: 'Mirko Zgela'

Cc: 'lbarbeau@sympatico.ca'

Subject: Helitowcart- Documents vs BP350

Hello Mirko,

Voici enfin les documents mis à jour pour le BP350.

Je t'envoie tous les documents qui ont fait objet de travail pour la création du BP350.

Les documents pour les composantes qui ne changent pas je ne t'envoie pas pour éviter que tu aies à tout relire!

Espérant le tout à ta convenance,

J'attends de tes nouvelles,

Nathalie

Helitowcart (by Vanair inc.)

860 Marie-Victorin,

St-Nicolas, Levis

Quebec, Canada G7A 3S9

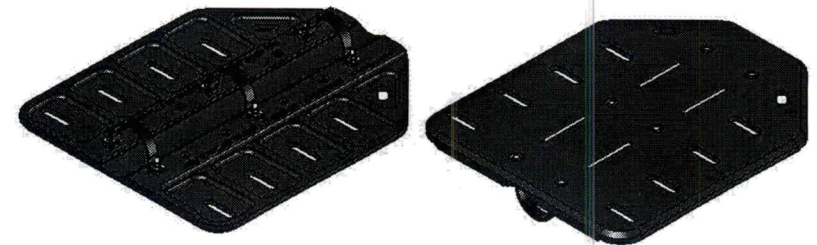
t: +1.418.561.4512

f: +1.418.836.2291

info@helitowcart.com

www.helitowcart.com

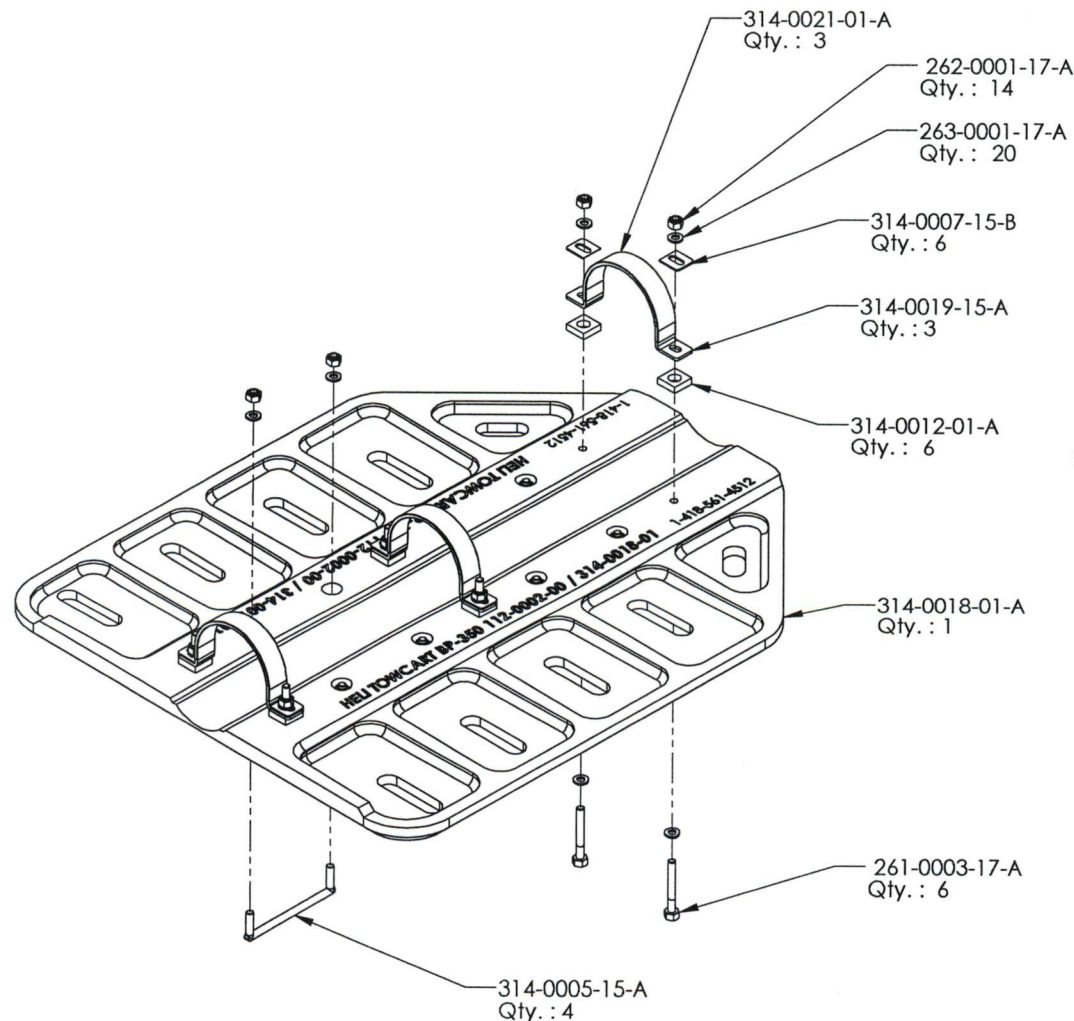
No.	Qty.	Description	Part #	Rev #
1	1	Bearpaw BP-350 - Pad	314-0018-01	A
2	3	Bearpaw BP-350 - U shaped clip	314-0019-15	A
3	3	Bearpaw BP-350 - Shrink 1" x 6 1/4"	314-0021-01	A
4	6	Bearpaw - Slotted clip support	314-0007-15	B
5	6	Bearpaw - Filler Block 1/4"	314-0012-01	A
6	4	Bearpaw - Iceblade Assembly	314-0005-15	A
7	6	Bolt ANA-16A	261-0003-17	A
8	20	Washer AN960-416	263-0001-17	A
9	14	Nut MS20-365-428	262-0001-17	A



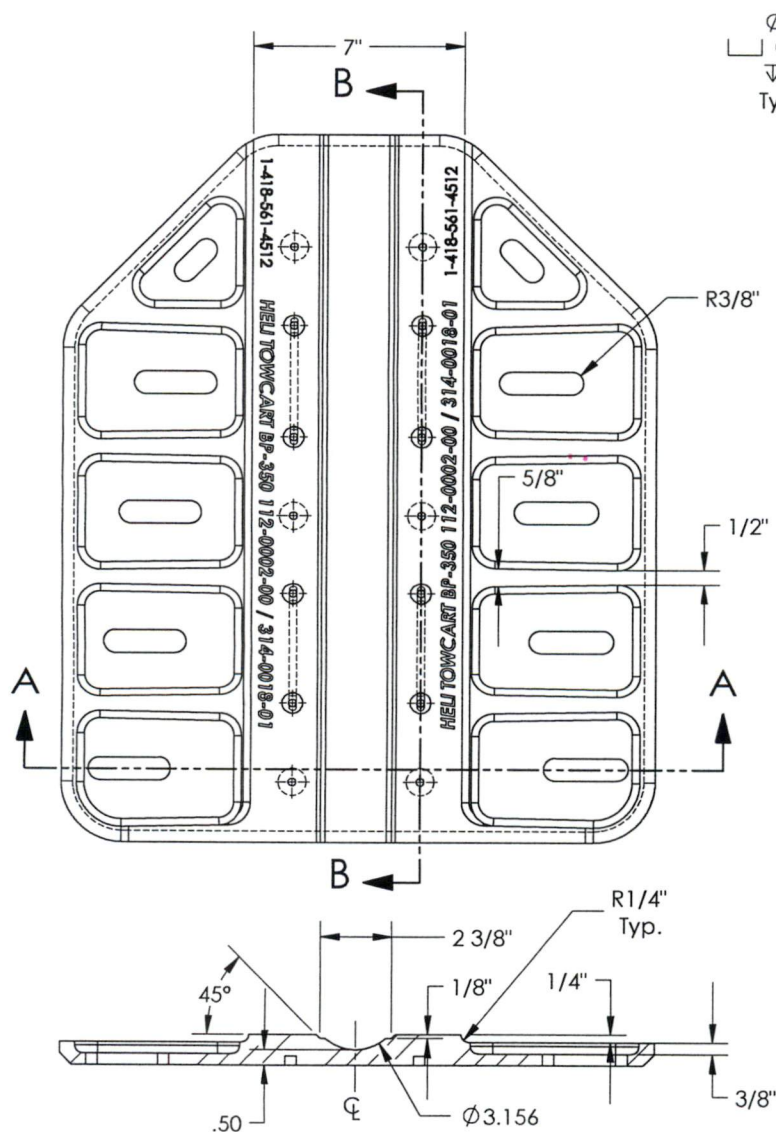
Note : Iceblade assembly can be omitted from installation (Optional)

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Dessiné par / Drawing by: G.Lapointe	Date: (mm/dd/yyyy) 10/3/2006	Format: B	Echelle / Scale: 1:4	# Page: 1	
Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Dessin # / Drawing #: 112-0002-00	Rev #: R01		
Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #: 112-0002-00	Rev #: A		

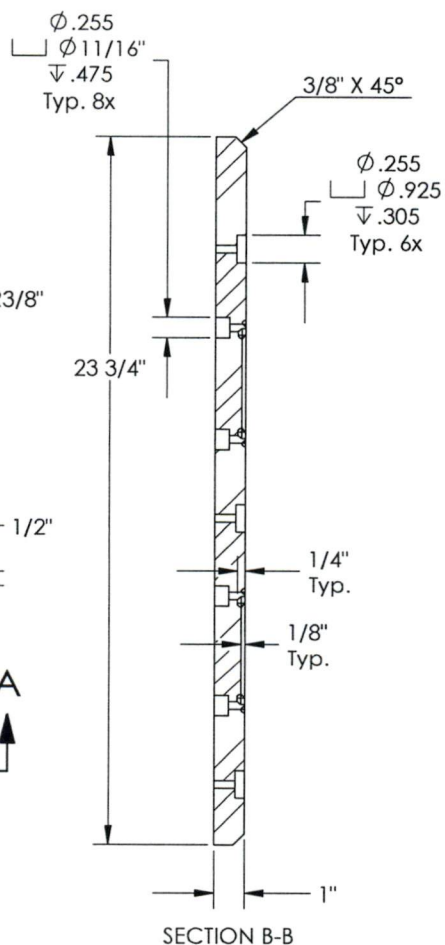
Rev.	Description	Date	By
R01	Initial Issue	29-sept.-06	G.L.



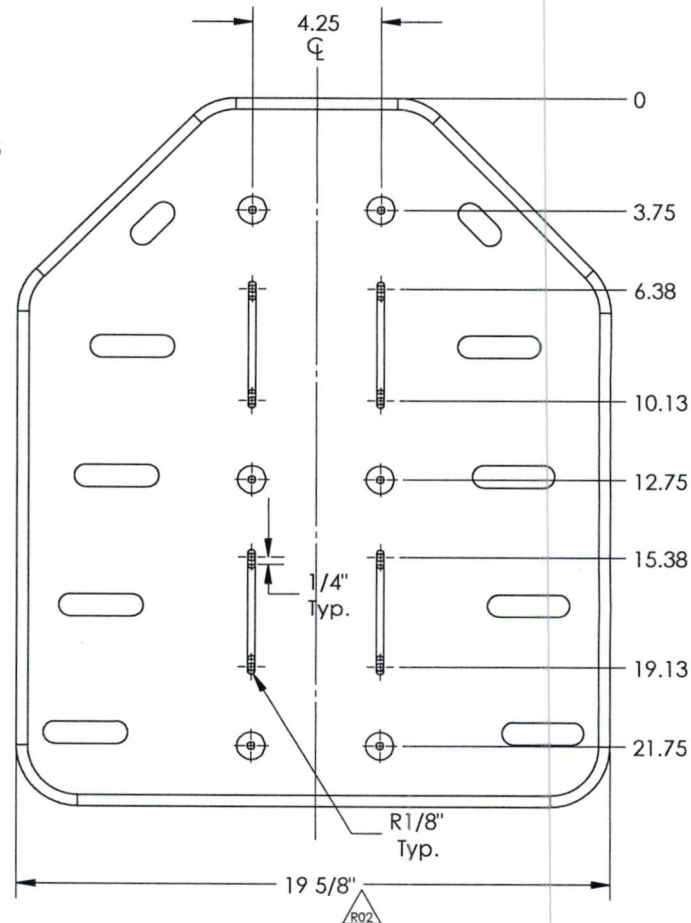
112-0002-00-A (same) BearPaw BP350 Assy



SECTION A-A



SECTION B-B

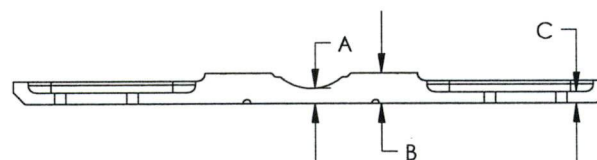
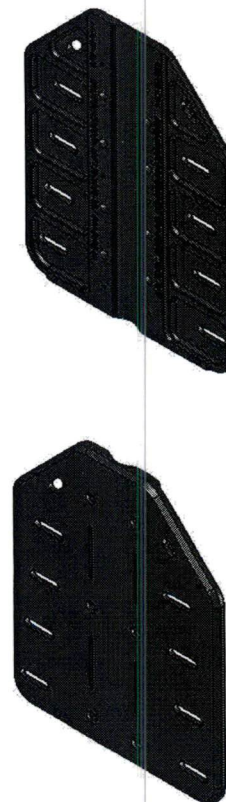
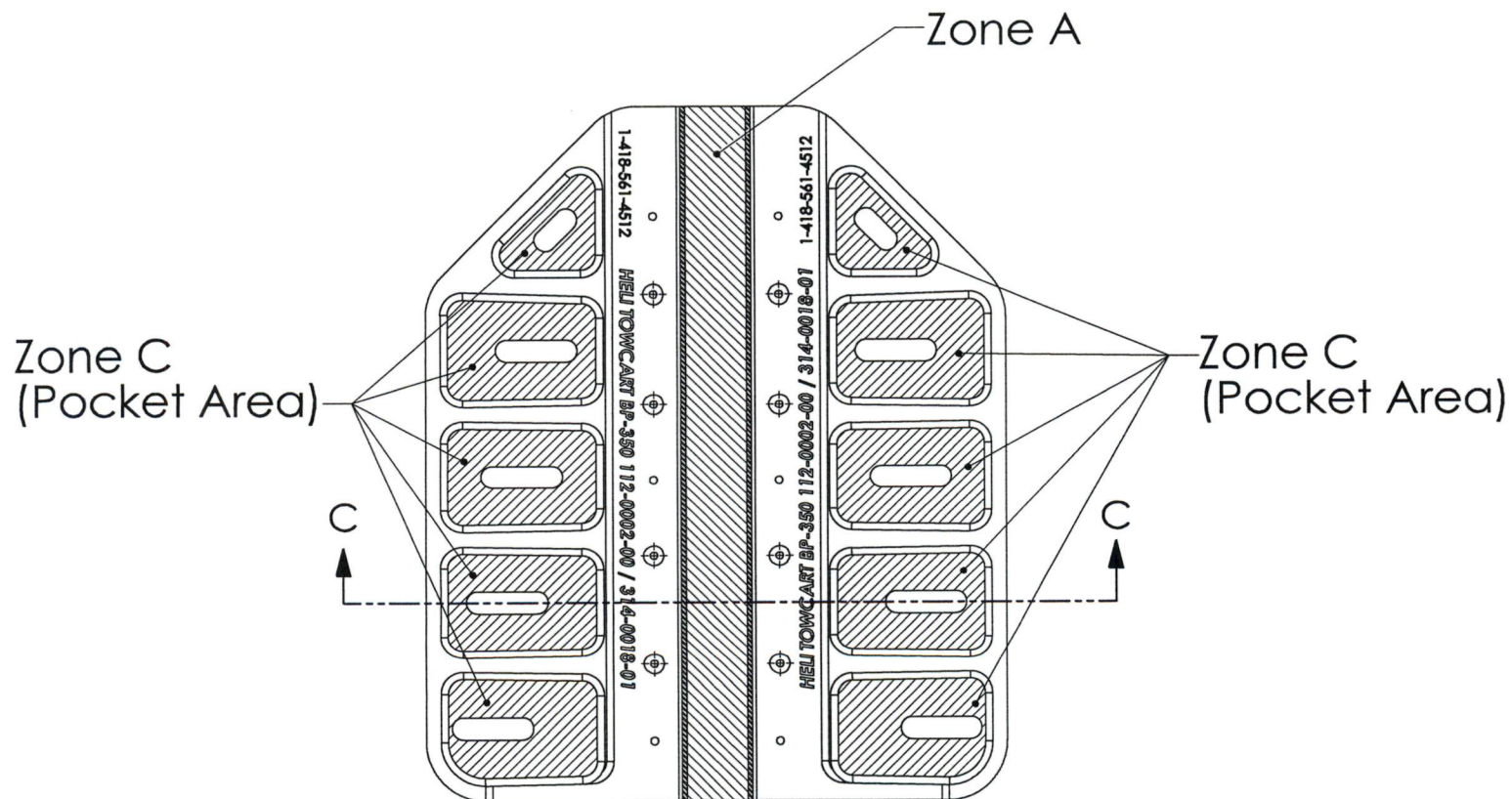


Note :
 - Raw material specification :
 UHMW Polyethylene Sheet 1"
 - Machined From File :
 VNR106.SLDprt
 - Break corner 0.01 x 45 deg Typ.
 - If no indicated dimension,
 Follow 3D file Specs.

R02	Smaller - was 20"	26-sept.-06	G.L.
R01	Initial issue	18-sept.-06	G.L.
Rev.	Description	Date	Par

TOLERANCES X/X ± 1/32" X.X ± 1/64" X.XX ± 0.010" X.XXX ± 0.005"		Time / Title: Bearpaw BP-350 - Pad		Material / Material: UHMW Black	
		Dessiné par / Drawing by: G.Lapointe	Date: (mm/dd/yyyy) 10/3/2006	Format: B	Echelle / Scale: 1:4
Vérifié par / Checker by: VNR106		Date: (mm/dd/yyyy) 10/3/2006		Dessin # / Drawing #: VNR106	Rev #: R02
Approuvé par / Approved by: 314-0018-01		Date: (mm/dd/yyyy) 10/3/2006		Pièce # / Part #: 314-0018-01	Rev #: A

314-0018-01-A (vnr106) Bearpaw BP350 Pad

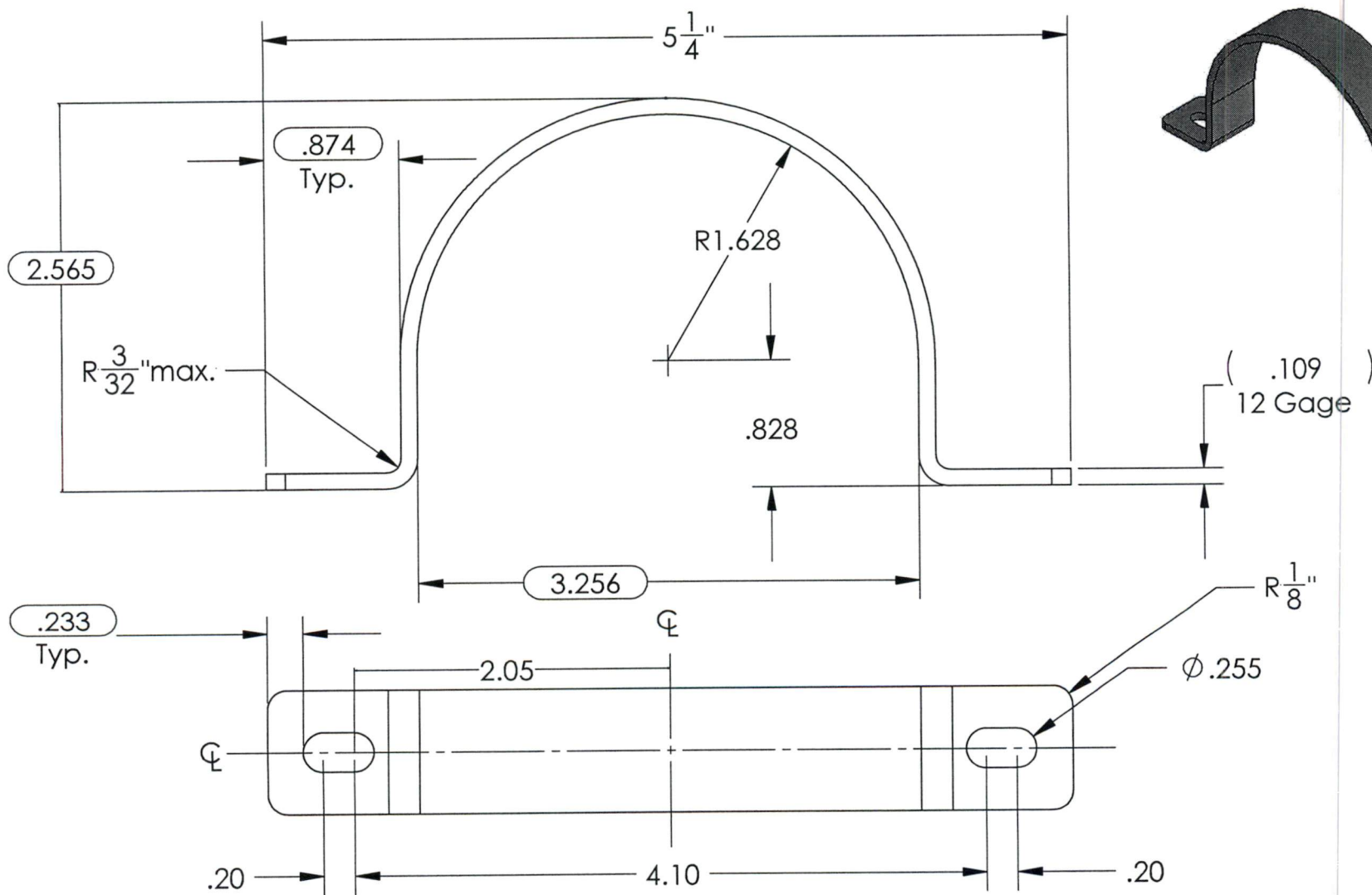


COUPE C-C

TOLERANCES X/X ± 1/32" X.X ± 1/64" X.XX ± 0.010" X.XXX ± 0.005" ANGLES ± 1° Finish		Title / Titre: Bearpaw BP-350 - Pad		Material / Matériau: UHMW Black	
		Dessiné par / Drawing by: G.Lapointe	Date: (mm/dd/yyyy) 10/3/2006	Format: B	Échelle / Scale: 1:4
Vérifié par / Checker by:		Date: (mm/dd/yyyy)	Dessiné par / Drawing by: VNR106	Rev #: R02	
Approuvé par / Approved by:		Date: (mm/dd/yyyy)	Pièce # / Part #: 314-0018-01	Rev #: A	

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TOLERANCES		Titre / Title:		Matériel / Material:	
X/X	± 1/32"	Bearpaw BP-350 - U shaped clip		SST 304 12ga	
X.X	± 1/64"	Dessiné par / Drawing by:	Date: (mm/dd/yyyy)	Echelle / Scale:	# Page:
X.XX	± 0.010"	G.Lapointe	10/3/2006	A	1
X.XXX	± 0.005"	Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Dessin # / Drawing #:	Rev #:
Finish				VNR107	R01
ANGLES ± 1°		Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #:	Rev #:
				314-0019-15	A

Rev.	Description	Date	By
R01	Initial Issue	29-sept.-06	G.L.

314-0019-15-A (vnr 07) Bearpaw BP350-U shaped clip

Master Document List

Helitowcart Inc.

Astar 350/355 Helicopters Installation of BearPaw Model BP350

Report: HTC-MDL-BP-BP350-1000 (Rev A)

APPROVED BY:


Mirko Zgela

DATE: SEPT 7, 2006

Design Approval Representative DAR #310

Revision	Revision Date	Revision of Entry	Entered by

1.0 MASTER DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
AAC-CPL-BP-R44-1000	Compliance Plan - Robinson R44 Helicopters - Installation of Bear Paw Model BP44	NC	DAR 310	July 4, 2006
HTC-314-0020-00-A	BearPaw Model BP350 - Installation Instructions - AS350/355	A	DAR 310	Sept 6, 2006
AAC-STR-BP-R44-1000	Structural Substantiation - Helitowcart Inc. BearPaw Model BP44	NC	DAR 310	July 4, 2006
AAC-FTR-C-FBLO	Simple External Modification - Applicant's Flight Test Plan/Report	NC	DAR 310	Aug 4, 2006

2.0 MASTER DRAWINGS

Drawings #	Title	Revision Status	Approval by	Date
112-0002-00	BearPaw BP350 - Assembly	R01	DAR 310	Oct 3, 2006
VNR084	BearPaw - Iceblade	R01	DAR 310	Apr 24, 2006
VNR085	BearPaw - Iceblade Threaded Rod	R01	DAR 310	Apr 24, 2006
VNR086	BearPaw - Iceblade Assembly	R01	DAR 310	Apr 24, 2006
VNR106	BearPaw BP350 - Pad	R02	DAR 310	Oct 3, 2006
VNR107	BearPaw BP350 - U Shaped Clip	R01	DAR 310	Oct 3, 2006
VNR089	Bearpaw - Slotted Clip Support	R04	DAR 310	July 31, 2006
VNR099	Filler Block 1/4"	R01	DAR 310	Aug 8, 2006
VNR103	Filler Block 3/32"	R01	DAR 310	Sept 6, 2006
VNR104	Filler Block 1/8"	R01	DAR 310	Sept 6, 2006

3.0 REFERENCE DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
314-0009-01-A	Ultra High Molecular Weight Polyethylene - Typical Properties	A	N/A	May 24, 2006
314-0008-01-A	Propriétés du UHMW TIVAR	A	N/A	May 24, 2006
314-0017-05-A	Heat Shrink Specifications	A	N/A	Sept 6, 2006

DRAFT 2 (2006 10 03)

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Annex B (BearPaw Pad Drawing)	

INTRODUCTION

Scope

This installation instruction describes the step-by-step approach to install and to perform maintenance of the Helitowcart BearPaw for your AS 350/355.

General

The Helitowcart BearPaw is made of machined UHMW TIVAR® polymer sheet. This material combines high-impact performance, low friction and good resistance to chemical. Its high durability will provide superior performance to your Robinson helicopter. Any question regarding the Helitowcart BearPaw system shall be directed to Helitowcart Customer Support as indicated in Table (1):

Table 1 – Helitowcart Customer Support

Care of	Mailing Address	Phone, Fax & Email:
Customer Support Helitowcart BearPaw Helitowcart (Vanair inc)	860 Marie-Victorin St-Nicholas, Lévis, Québec, Canada, G7A 3S9	Tel:1 (418) 561-4512 Fax:1 (418) 836-2291 info@helitowcart.com

Helicopter Effectivity

This installation instruction applies to the following EUROCOPTER Helicopters:

Table 2 – Eurocopter Helicopter Effectivity

A/C Model	Serial no.	Type Certificate Data Sheet
???	???	???
???	???	???

Installer Responsibilities

The installer shall ensure that the installation of the Helitowcart BearPaw does not conflict with any other part of the helicopter configuration. Technicians performing this installation should be familiar with A/C work and should have been familiarized with the different Helitowcart BearPaw system components prior to performing a first time installation. All steps in this procedure must be followed. Deviations from the procedures may result in potential structural failure or equipment malfunction and will result in a non-compliant installation.

314-0020-00-A Instr BearPaw Installation AS350-355 (2006.10.03)

INSTALLATION

BearPaw Installation

Reference Documentation:

- [1] [REDACTED]
[2] Annex A – BearPaw Assembly Drawing (112-0002-00)

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 1/2" (38mm);
- Remove an skid wear shoe & re-install the attaching screws. [Can we make provision to keep them on? It has been asked by users]

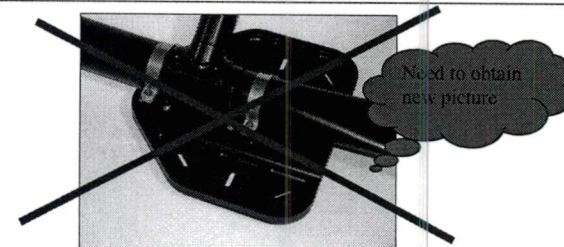
Step 2: BearPaw Preparation

- With IceBlade Option: Install ice blades (Qty:2) under BearPaw pad as per drawing (112-0002-00) Ref [2];
- With IceBlade Option: Insert washer (Washer P/N 263-0001-17) through threaded part of the ice blade and secure with nut (P/N 262-0001-17);
- Position the BearPaw under skid at the aft intersection with the cross tube as per figure 1 with narrow edge pointing forward.

Step 3: BearPaw Set Up

- Insert washers (P/N 263-0001-17) through all six bolts: 2x(P/N261-0002-17) & 6x(261-0003-17);
- Insert bolts(P/N261-0002-17) & (P/N 261-0003-17) and washer (Washer P/N 263-0001-17) through BearPaw pad as per drawing (112-0002-00) Ref [2];
- Insert filler blocks (P/N314-0012-01) & (P/N314-0014-01) at front of BearPaw & insert filler blocks (P/N314-0015-01) at rear of BearPaw as per drawing (112-0002-00) Ref [2];
- The use of filler blocks mentioned above may be replaced or complemented by the use of washers (P/N 263-0001-17). Bolts (P/N261-0002-17) & (P/N 261-0003-17) may be replaced by longer or shorter AN4 bolts as required.
- Insert both U-shaped clips (P/N 314-0019-15) through bolts: 2x(P/N261-0002-17) & 6x(261-0003-17);
- Insert slotted clip supports (P/N 314-0007-15) through all six bolts. Position slotted clip supports with rounded edge toward helicopter skid;
- Insert washer (P/N 263-0001-17) & screw nuts (P/N 262-0001-17) for a tight fit. Max. torque on nuts 60 in.-lb;
- Remove helicopter from lift;
- Amend Weight & Balance records as required using data provided in Table 3.

Figure 1 - Installed BearPaw Model BP44



BearPaw Removal

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);

Step 2: BearPaw Removal

- Remove nuts (P/N 262-0001-17), slotted clip support (P/N 314-0007-15) on U-shaped clips (P/N 314-0019-15);
- Remove U-shaped clips (P/N 314-0006-15), filler blocks (P/N 314-0012-01), (P/N 314-0014-01) & (P/N 314-0015-01) and remove BearPaw pad (P/N 314-0001-01);
- Inspect skid tubes to confirm serviceability
- Re-install an wearshoe with screws as per reference [1];
- Complete installation by putting helicopter back to normal position by rem
- Amend Weight & Balance records as required.

Peut-on ne pas enlever wearshoe?

Weight & Balance

The following information should be used to amend the helicopter weight and balance information following the installation or removal:

Table 3 – Weight & Balance Data

Item	Weight	Lateral		Longitudinal	
		Arm	Moment	Arm	Moment
Helitowcart BearPaw Model BP350	?? LB ?? Kg	?? in 0.0 mm	?? OIB-kG 0.0 mm-kG	?? ?? m	?? in-lb ?? m-kG

Parts Lists

The Helitowcart BearPaw detailed parts list is as follow:

Table 4 – Parts List

Description	Qty	Part No.	Drawing no./name
BearPaw Model BP350	1	112-0002-00	VNR(112-0002-00) / BearPaw Assembly
BearPaw pad	1	314-0018-01	VNR106 / BearPaw BP350 - Pad
U Shaped Clips	3	314-0019-15	VNR107 / BearPaw BP350 - U Shaped Clips
Slotted Clip Support	6	314-0007-15	VNR089 / BearPaw - Slotted Clip Support
Filler blocks 1/4"	6	314-0012-01	VNR099 / BearPaw – Filler block ¼"
Filler blocks 3/32"	2	314-0014-01	VNR103 / BearPaw – Filler block 3/32"
Filler blocks 1/8"	2	314-0015-01	VNR104 / BearPaw – Filler block 1/8"
Bolts	2	261-0002-17	Bolt-AN4-16
Bolts	6	261-0003-17	Bolt-AN4-16
Nuts	6	262-0001-17	Nut-MS20-365-428
Washers	12	263-0001-17	Washer – AN960-416
Shrink	3	314-0021-01	BearPaw – Shrink Specifications & Install.(1"x6.25")
IceBlade Option Model OIB	4	314-0005-15	VNR086 / IceBlade Assembly
Nuts	8	262-0001-17	Nut-MS20-365-428
Washers	8	263-0001-17	Washer – AN960-416

INSPECTION

Life Limited Items

Three are no life limited items for the Helitowcart BearPaw.

Pre-Flight

Before each flight the following items should be inspected:

- Check that attachment bolts are installed and secured,
- Check that BearPaws are free from visible damage,
- If damage is found, verify allowable damage according to:
 Table 5 – Tolerances for cracks & wear, &
 Annex B – BearPaw Allowable Damage Drawing (VNR106 page 2 of 2)

Periodic Inspection Schedule

- The Helitowcart BearPaw shall be inspected every 300 flying hours or yearly whichever comes first.
- The Helitowcart BearPaw can be inspected concurrently with the helicopter R44 landing gear inspection.
- Recommended tolerance for performance of inspection is +/- 10% of the 300 hours period.
- Following an inspection, subsequent interval shall be adjusted to meet the original schedule from time of inspection. If inspection is performed earlier than the 10% tolerance, then following inspections shall be scheduled not to exceed the above mentioned tolerance.

300 Hour or Yearly Inspection Details

- Remove Helitowcart BearPaw: See Section "BearPaw Removal",
- Inspect all parts for damage & wear. See table & figure below for allowable damage,
- Replace all damaged parts,
- Replace parts worn beyond the tolerances indicated below.
- See Tolerances for cracks & wear:
 Table 5 – Tolerances for cracks & wear, &
 Annex B – BearPaw Allowable Damage Drawing (VNR106 page 2 of 2)

Table 5 – Tolerances for Cracks & Wear

Zone	Nominal Dimension (Inches)	Allowable Damage/Wear (Inches)	Cracks
A	0,350	0,050	
B	1,000	0,250	
C	0,375	0,075	Stiffeners: NO cracks in stiffeners. Pockets: Cracks are acceptable in the Helitowcart BearPaw pocket areas to a maximum length of 0,5" provided they are 0,25" away from the stiffener radius change. Stop drill cracks with a 0,125" hole.
D	0,350	0,050	
E	N/A	N/A	No cracks allowed in zone E



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

Overhaul Requirements

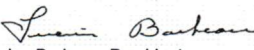
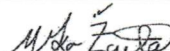
- Not applicable for the designated application of this device.

REVISIONS & APPROVAL

Revisions

Date	Rev	Nature of Revisions
June 12, 2006	A	Initial issue

Approval

Internal Approval :		
Helitowcart inc.	 Lucien Barbeau, President	September 7, 2006 Date:
External Approval :		
Transport Canada	 Mirko Zgela, DAR #310	September 7, 2006

Annex A

See: BearPaw Assembly, drawing no(112-0002-00)

Annex B

See: BearPaw Pad, drawing no. VNR106. Page 2 of 2.



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

Annex A

BearPaw Assembly, Drawing no. VNR(112-0002-00).
P/N 112-0002-00-A



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

Annex B

BearPaw Pad, Drawing no. VNR106. Page 2 of 2.
P/N 314-0018-01-A



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

FAX TRANSMISSION

Date: 3 oct., 2006
Pages: 6

To: **Guillaume Lapointe**

From : Nathalie Barbeau, Vanair inc.

Object: **Revue des dessins soumis**

Allo Guillaume,

J'ai revu les dessins réalisés et j'ai les enjeux suivants à clarifier :

- 1) Svp ajouter notre no de tél. gravé dans le pad, comme tu as fait pour le BP44. Pas de problème s'il faut réduire la taille des lettres.
- 2) Ton no de dessin est il vraiment 112-0002-00 pour le dessin d'assemblée? d'habitude tu les nommes VNRxxx.?
- 3) Modifier le pad et y ajouter 1/16" pour renforcer les pockets. voir mon croquis et celui fourni par Mirko.
- 4) Est-ce que je suis correcte de voir qu'il n'y a dorénavant que 3 zones du pad, ABC...seulement?
- 5) Serait-il possible de me mettre des cotes additionnelles sur le dessin du UClip afin de faciliter mon inspection à la réception? (si cela n'occasionne pas de problème avec la production). Je veux que ce soit très facile à mesurer à la réception.

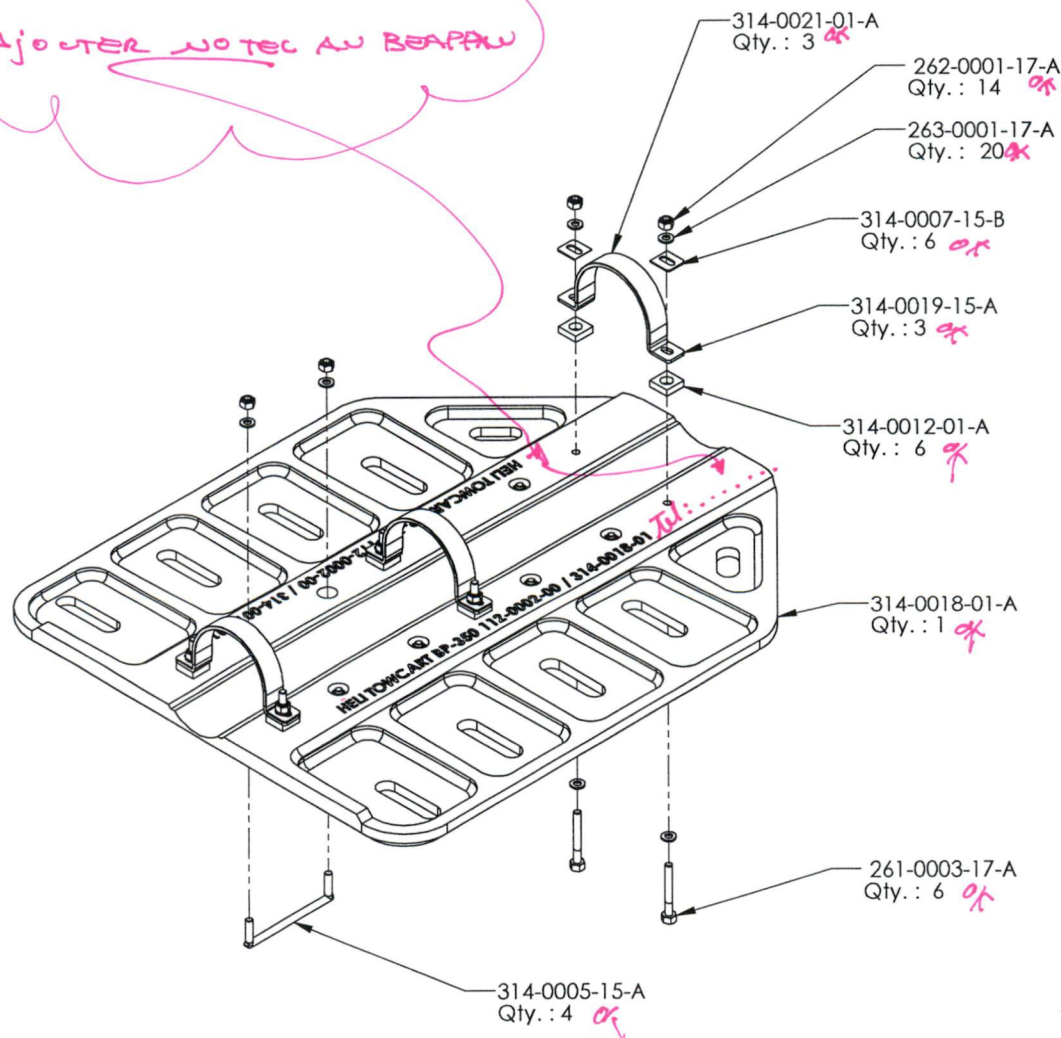
J'attends de tes nouvelles!

Merci beaucoup,

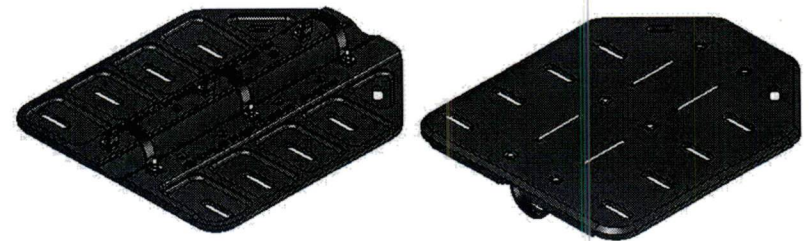


Nathalie Barbeau
Marketing Manager,
Helitowcart (Vanair inc.)
nbarbeau@helitowcart.com
info@helitowcart.com

Ajouter note au Bearpaw



No.	Qty.	Description	Part #	Rev #
1	1	Bearpaw BP-350 - Pad	314-0018-01	A
2	3	Bearpaw BP-350 - U shaped clip	314-0019-15	A
3	3	Bearpaw BP-350 - Shrink 1" x 6 1/4"	314-0021-01	A
4	6	Bearpaw - Slotted clip support	314-0007-15	B
5	6	Bearpaw - Filler Block 1/4"	314-0012-01	A
6	4	Bearpaw - Iceblade Assembly	314-0005-15	A
7	6	Bolt ANA-16A	261-0003-17	A
8	20	Washer AN960-416	263-0001-17	A
9	14	Nut MS20-365-428	262-0001-17	A



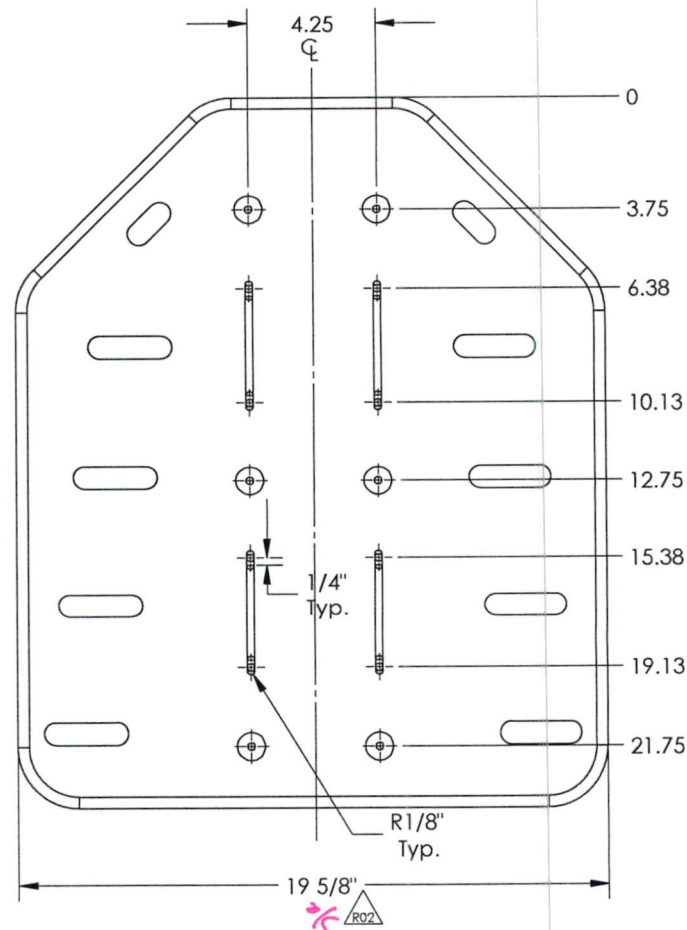
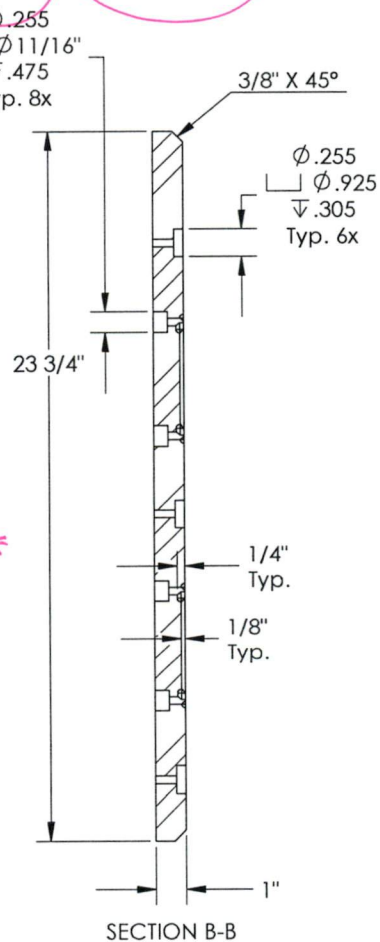
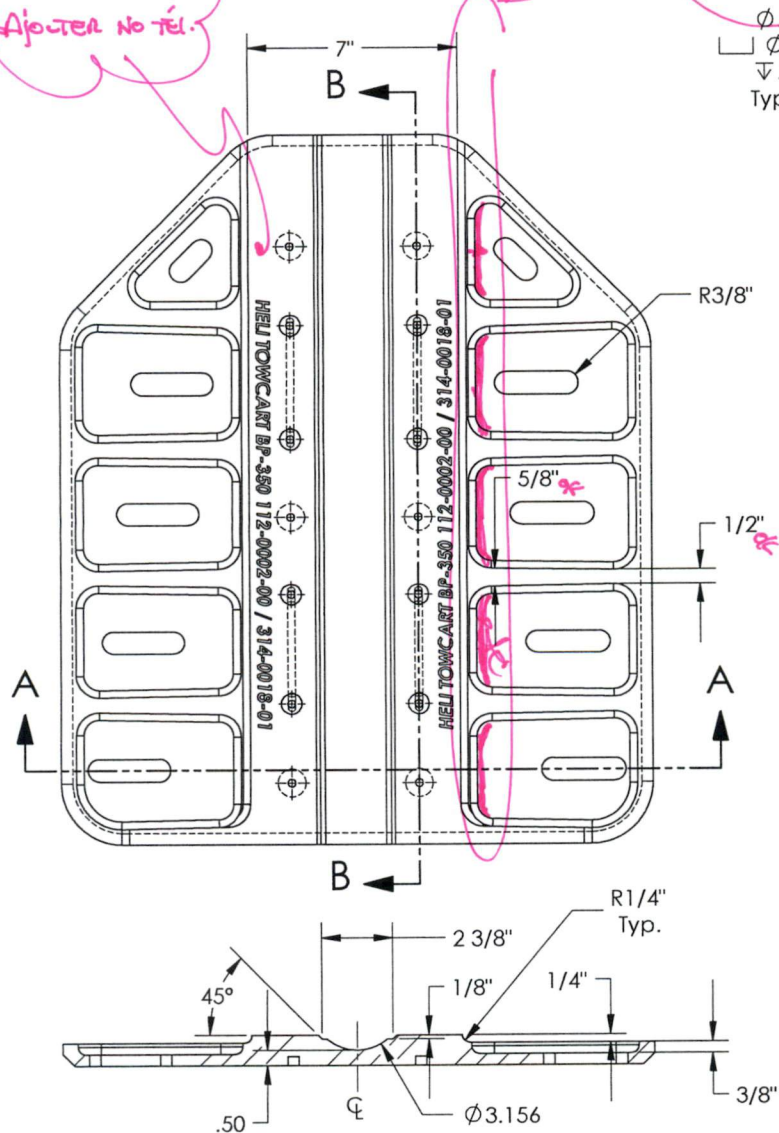
Note : Iceblade assembly can be omitted from installation (Optional)

Rev.	Description	Date	By
R01	Initial Issue	29-sept.-06	G.L.

		Vanair Inc. 860, Marie-Victorin St-Nicolas, Lévis (Québec) Canada, G7A 3S9 Tél: (418) 561-4512 Fax: (418) 836-2291 www.helitowcart.com		THIS DOCUMENT IS PROPERTY OF VANAIR INC. WRITTEN PERMISSION FROM VANAIR INC. SHALL BE OBTAINED PRIOR TO COPYING, USING OR MODIFYING.	
Titre / Title: Bearpaw BP-350 - Assembly					
Dessiné par / Drawing by: G. Lapointe		Date: (mm/dd/yyyy) 10/2/2006		Format: B	
Vérifié par / Checker by:		Date: (mm/dd/yyyy)		Echelle / Scale: 1:4	
Approuvé par / Approved by:		Date: (mm/dd/yyyy)		# Page: 1	
Rev. # / Drawing #: 112-0002-00		Rev. # / Part #: 112-0002-00		Rev. #: R01	
Rev. #: A					

Need increase $\frac{1}{16}$ "

Ajouter No. tél.



Rev.	Description	Date	Par
R02	Smaller - was 20"	26-sept.-06	G.L.
R01	Initial Issue	18-sept.-06	G.L.

SECTION A-A

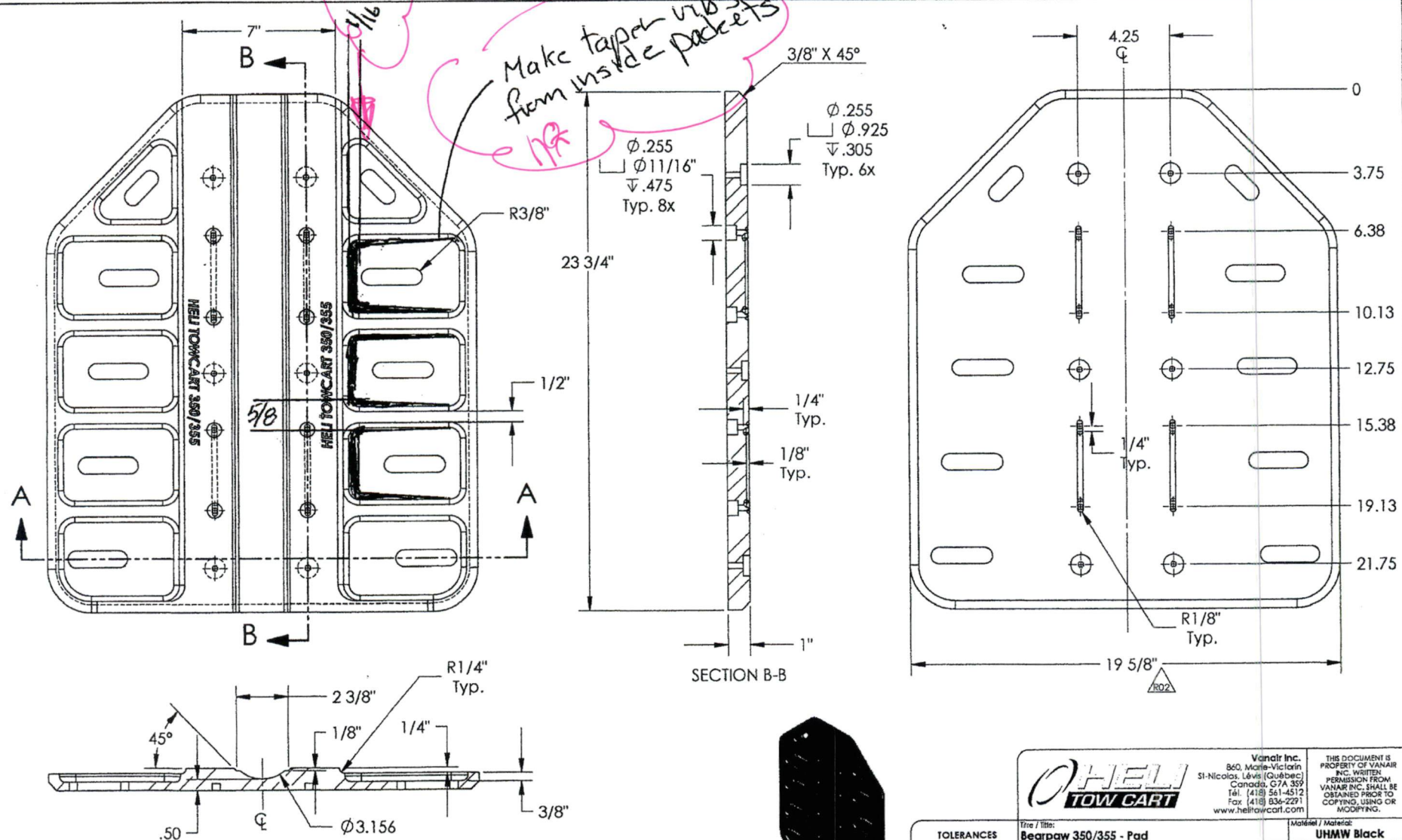
Note :
 - Raw material specification :
 UHMW Polyethylene Sheet 1"
 - Machined From File :
 VNR106.SLDPRT
 - Break corner 0.01 x 45 deg Typ.
 - If no indicated dimension,
 Follow 3D file Specs.

HELI TOW CART				Vanair inc. 860, Marie-Victorin St-Nicolas, Lévis (Québec) Canada, G7A 3S9 Tél. (418) 561-4512 Fax: (418) 836-2291 www.helitowcart.com				THIS DOCUMENT IS PROPERTY OF VANAIR INC. WRITTEN PERMISSION FROM VANAIR INC. SHALL BE OBTAINED PRIOR TO COPYING, USING OR MODIFYING.			
TOLERANCES X/X ± 1/32" X.X ± 1/64" X.XX ± 0.010" X.XXX ± 0.005"				Matériel / Material: UHMW Black				Échelle / Scale: 1:4			
Titre / Title: Bearpaw BP-350 - Pad				Dessiné par / Drawing by: G.Lapointe				Date: (mm/dd/yyyy) 10/2/2006			
Vérifié par / Checker by: G.Lapointe				Date: (mm/dd/yyyy) 10/2/2006				Dessin # / Drawing #: VNR106			
Approuvé par / Approved by: G.Lapointe				Date: (mm/dd/yyyy) 10/2/2006				Pièce # / Part #: 314-0018-01			
Angles ± 1°				Rev #: R02				Rev #: A			

increase

Demande de Mirko

Make taper ribs from inside pockets



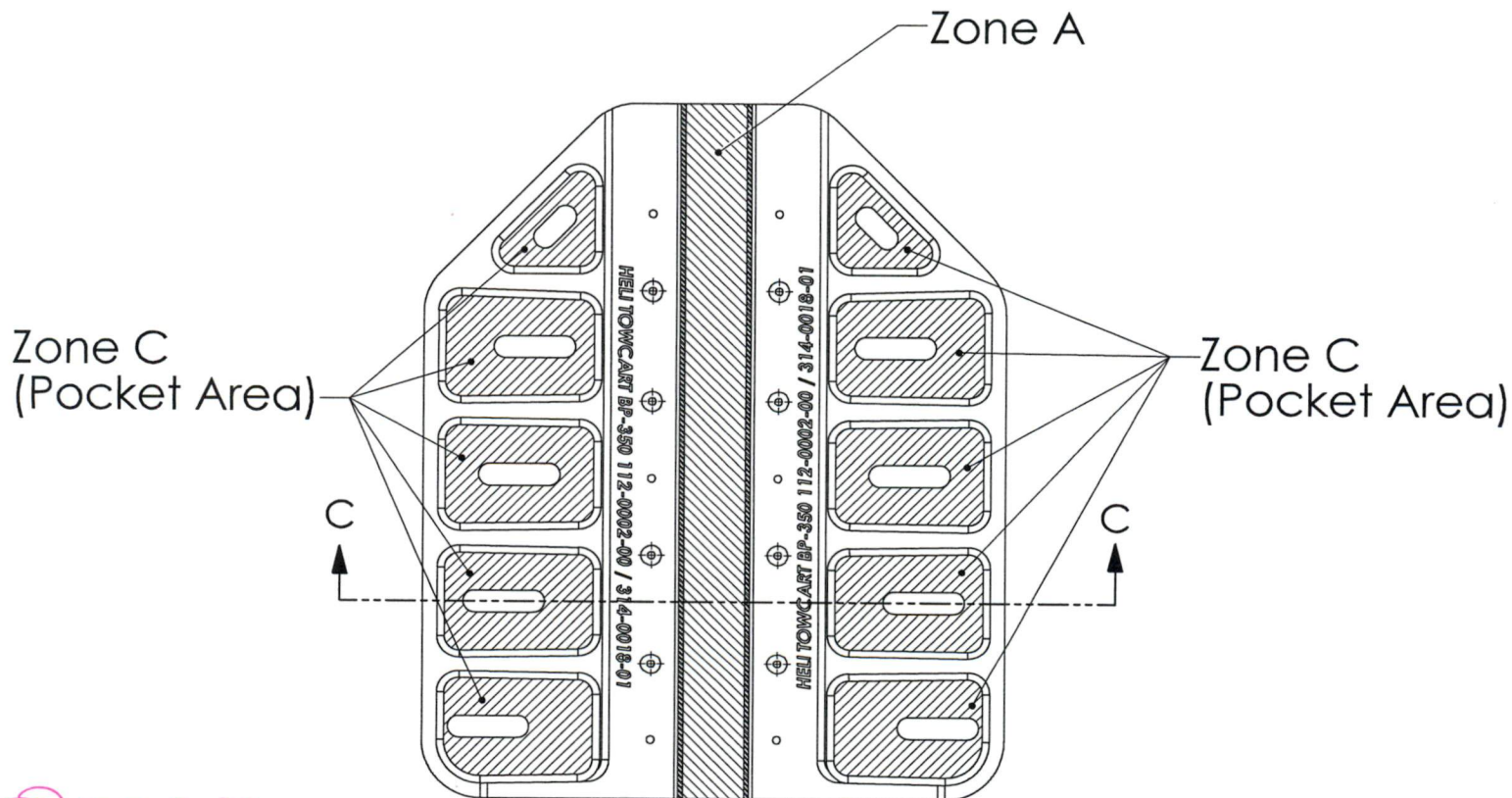
R02	Réduire Largeur - Éait 20"	26-sept-06	G.L.
R01	Emission originale	18-sept-06	G.L.
Rev.	Description	Date	Par

SECTION A-A

SECTION B-B

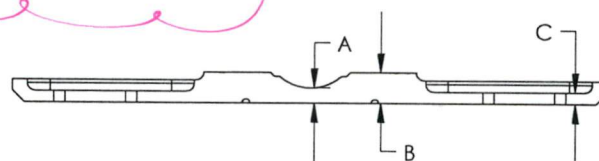


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TOLERANCES X/X ± 1/32" X.X ± 1/64" X.XX ± 0.010" X.XXX ± 0.005"		Titre / Title: Bearpaw 350/355 - Pad		Matériau / Material: UHMW Black	
Dessiné par / Drawing by: G.Lapointe		Date: (mm/dd/yyyy) 9/26/2006		Echelle / Scale: 1:4	
Vérifié par / Checked by:		Date: (mm/dd/yyyy)		Dessin # / Drawing #: VNR106	
Approuvé par / Approved by:		Date: (mm/dd/yyyy)		Pièce # / Part #: VNR106	
ANGLES ± 1°		Finish		Rev #: R02	



Question:

Are there no zones D, E, ?

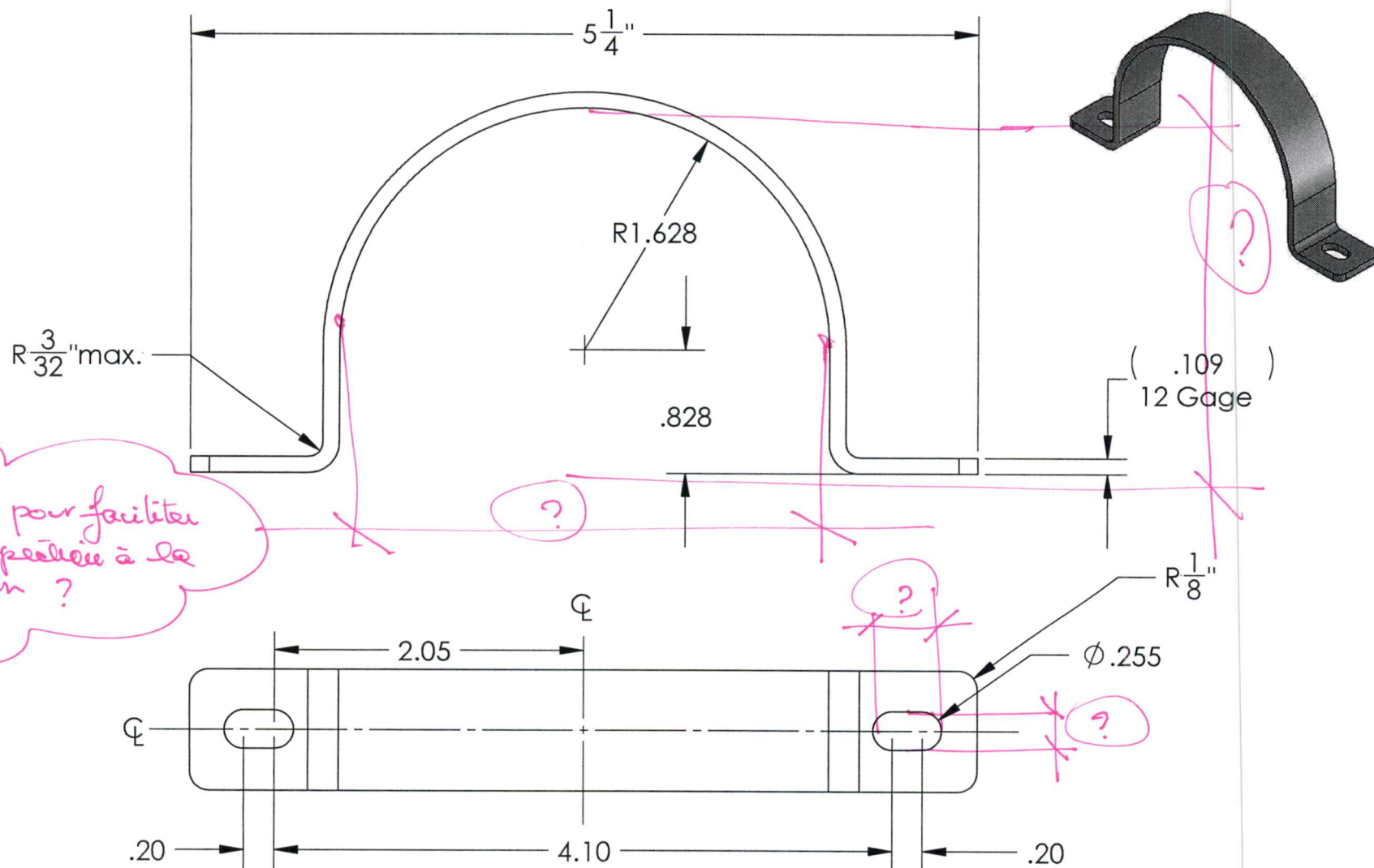


COUPE C-C

TOLERANCES X/X ± 1/32" XX ± 1/64" XXX ± 0.010" XXX ± 0.005" ANGLES ± 1° Finish		Time / Title: Bearpaw BP-350 - Pad		Date: (mm/dd/yyyy) 10/2/2006		Form: B		Material / Material: UHMW Black		Scale: 1:4		# Page: 2 / 2	
		Destiné par / Drawing by: G.Lapointe		Date: (mm/dd/yyyy)		Design # / Drawing #: VNR106		Rev #: R02		Piece # / Part #: 314-0018-01		Rev #: A	

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TOLERANCES

X/X	$\pm 1/32"$
X.X	$\pm 1/64"$
X.XX	$\pm 0.010"$
X.XXX	$\pm 0.005"$
	Finish

ANGLES $\pm 1^\circ$

Titre / Title:

Bearpaw BP-350 - U shaped clip

Dessiné par / Drawing by:

G.Lapointe

Vérifié par / Checker by:

Approuvé par / Approved by:

Date: (mm/dd/yyyy)

10/2/2006

Date: (mm/dd/yyyy)

Date: (mm/dd/yyyy)

Format:

A

Dessin # / Drawing #:

VNR107

Pièce # / Part #:

314-0019-15

Matériel / Material:

SST 304 12ga

Echelle / Scale:

1:1

Page:

1

Rev #:

R01

Rev #:

A

Rev.	Description	Date	By
R01	Initial Issue	29-sept.-06	G.L.

DART

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INSTALLATION INSTRUCTIONS

IIN-D500-572

Bearpaw Installation

BELL 369/500/600 MODELS

Prepared By: C. Provencal
C. Provencal
Mechanical Designer

Checked By: D. Shepherd
D. Shepherd, P. Eng.
DE #02

Released By: D. Shepherd
D. Shepherd, P. Eng.
DE #02

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Revision: **A**

Date: 01.02.21

REVISION RECORD

Revision	Issue Date	Description
A	01.02.21	New Issue

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Revision: **A**

Date: 01.02.21

1. INTRODUCTION

The Dart Bearpaws mount to the aft end of the skidtubes. One Bearpaw is installed on each skidtube and is attached with clamps and standard hardware, as shown in Figure 1 below. The Dart Bearpaw Installations may be installed on the following aircraft:

AIRCRAFT (as designated on H3WE / H-95)	DART INSTALLATION
MD 369, 369A, 369H, 369HM, 369HS, 369HE 369D, 369E, 369F, 369FF	D500-572-011 Bearpaw Installation D500-572-021 Narrow Bearpaw Installation
MD 500N	D500-572-013 Bearpaw Installation
MD 600N	D600-572-015 Bearpaw Installation

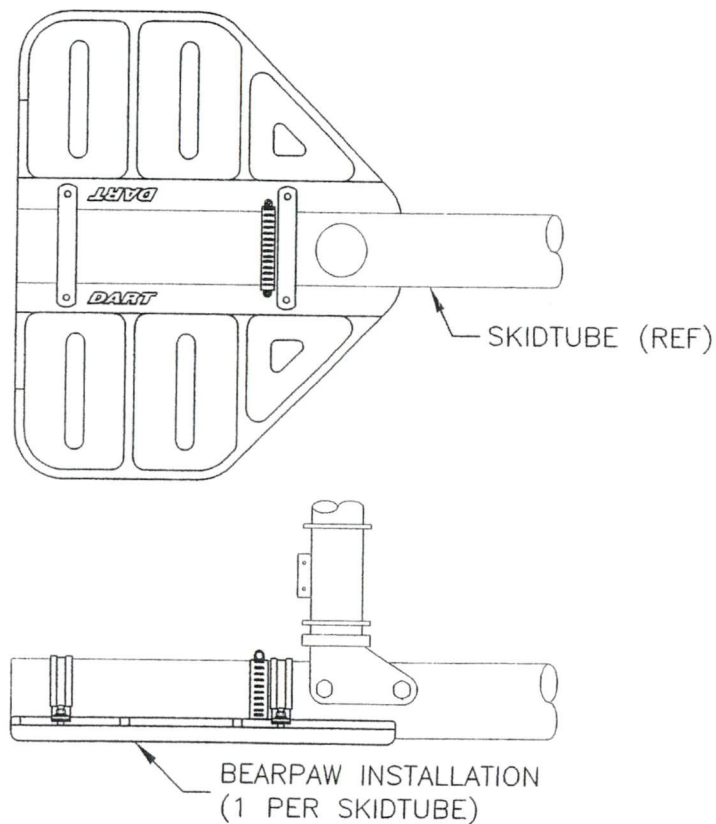


Figure 1 – Typical Bearpaw Installation

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Revision: **A**

Date: 01.02.21

2. GENERAL NOTES

COMPATIBILITY

Compatibility of this installation with the aircraft is the **responsibility of the installer**. Ensure that this installation does not conflict with a previous modification.

CONTINUING AIRWORTHINESS

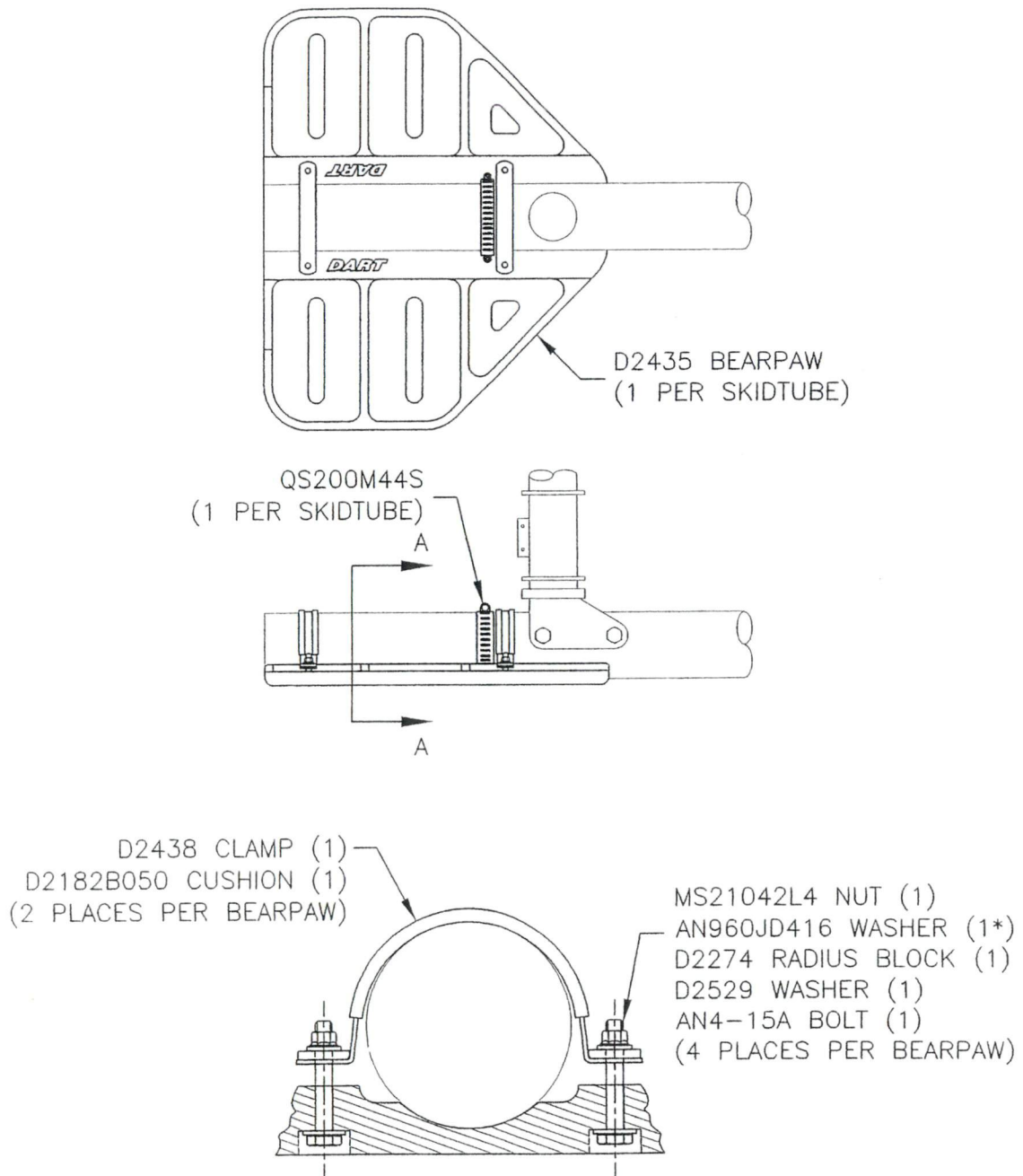
This installation should be maintained in accordance with the Instructions for Continued Airworthiness ICA-D500-572.

3. INSTALLATION PROCEDURE

To install the Dart Bearpaw on the skidtube:

1. Jack up the aircraft. Ensure the skidtubes are serviceable. Remove the wearshoe that would interfere with bearpaw installation. Plug holes with wearshoe screws.
2.
 - (i) For the D500-572-011 Bearpaw Installation: Position D2435 Bearpaw on the aft end of each skidtube so that both bearpaw clamps are located aft of the aft saddle as shown in Figure 2.
 - (ii) For the D500-572-021 Narrow Bearpaw Installation: Position D2671 Bearpaw on the aft end of each skidtube so that both bearpaw clamps are located aft of the aft saddle as shown in Figure 3.
 - (iii) For the D500-572-013 Bearpaw Installation: Position D2995 Bearpaw on the aft end of each skidtube so that the bearpaw clamps are located on either side of the aft saddle as shown in Figure 4.
 - (iv) For the D600-572-015 Bearpaw Installation: Position D2996 Bearpaw on the aft end of each skidtube so that the bearpaw clamps are located on either side of the aft saddle as shown in Figure 5.
3. The bearpaw may be relieved to clear wearshoe mounting screws provided the relief leaves 0.375" (9.53mm) thickness.
4. For the D500-572-011 and D500-572-021 Bearpaw Installations, the QS200M44S Clamps must be installed behind the forward D2438 Clamp to ensure that the bearpaw doesn't slip, as shown in Figures 2 and 3.
5. For the D600-572-015 Bearpaw Installation, join two QS100M24S Clamps together and install them behind the forward D2519 Clamps to ensure that the bearpaw doesn't slip, as shown in Figure 5. Remove aft ground handling stud and plug the holes with Sikaflex-241/291 or Proseal 890 sealant.
CAUTION: The aircraft must be ground handled using the forward studs only. Consider weight and balance when ground handling the aircraft.
6. Attach the D2438 or D2519 Clamps with the hardware shown in the appropriate figure.
CAUTION: The torque on the nuts should be limited to 20 in-lb (2.3 Nm).
7. Additional AN960JD416 washers may be installed under the nuts to ensure 1.5-4 threads in safety on the bolts. Although not generally necessary, it is also acceptable to replace the AN4-13A or AN4-15A bolts with longer or shorter AN4 bolts, if required.
8. Lower the aircraft

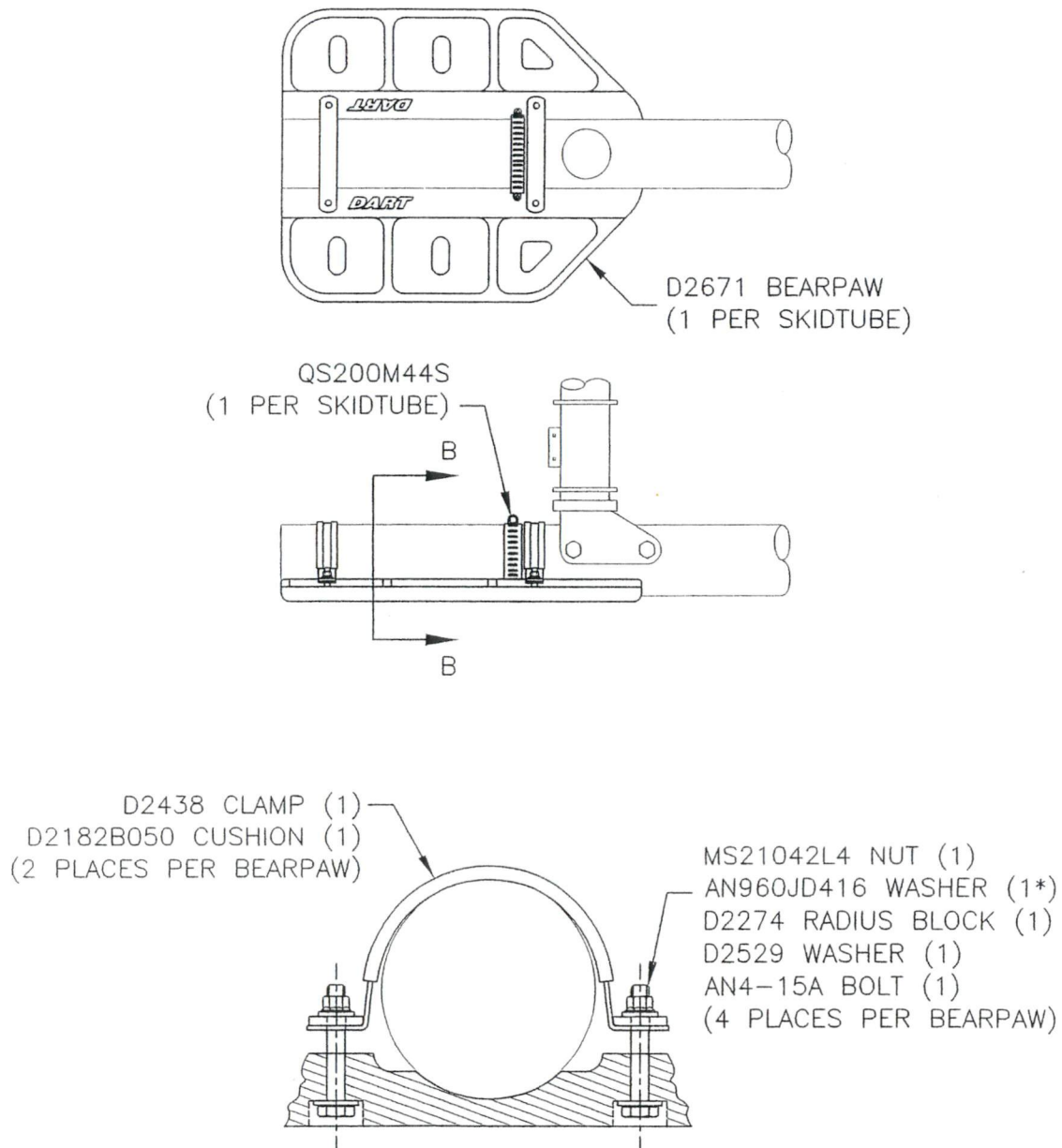
FIGURE 2: D500-572-011 BEARPAW INSTALLATION



SECTION A-A

* SEE NOTE 7

FIGURE 3: D500-572-021 NARROW BEARPAW
INSTALLATION



SECTION B-B

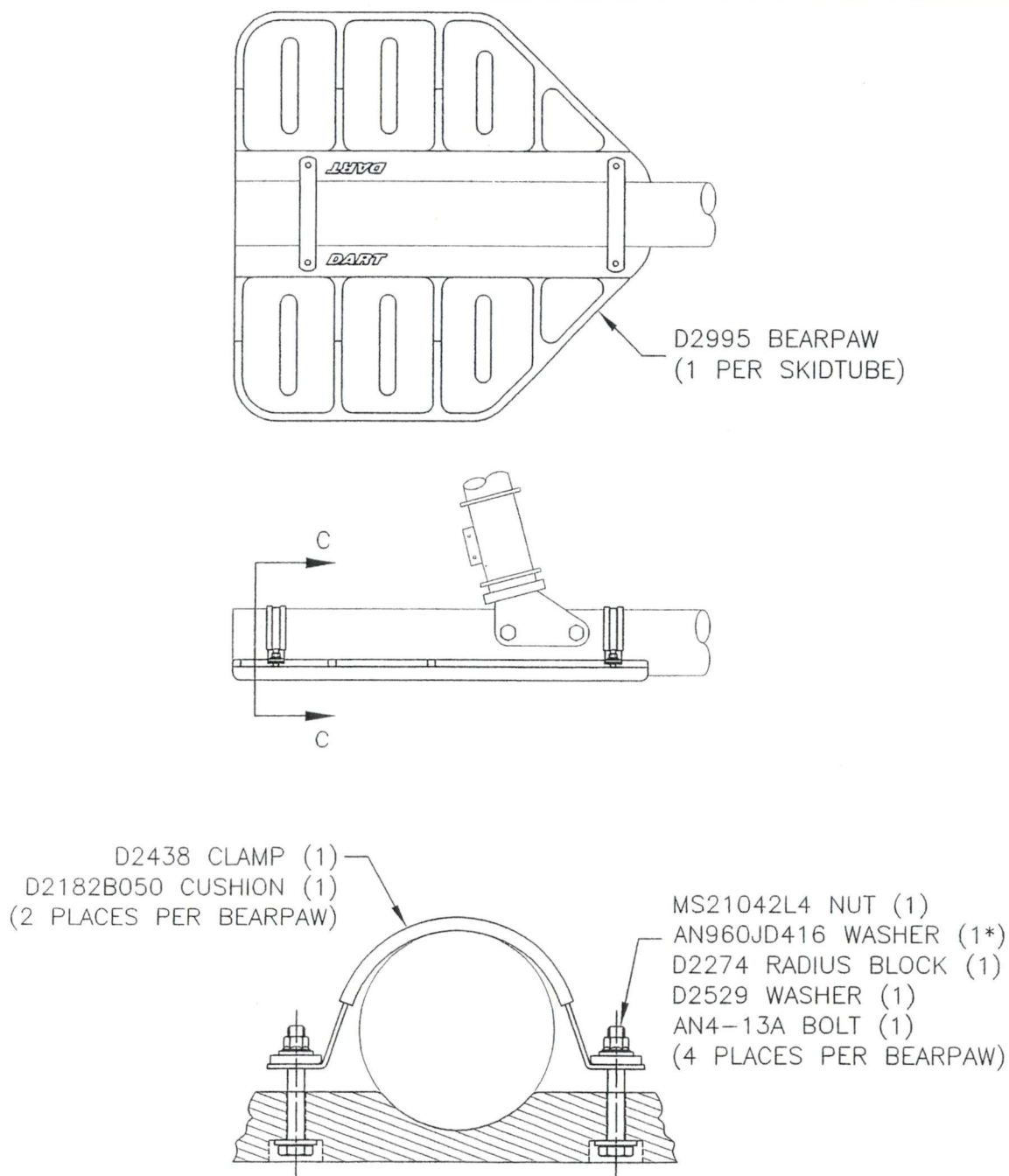
* SEE NOTE 7

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Revision: **A**

Date: 01.02.21

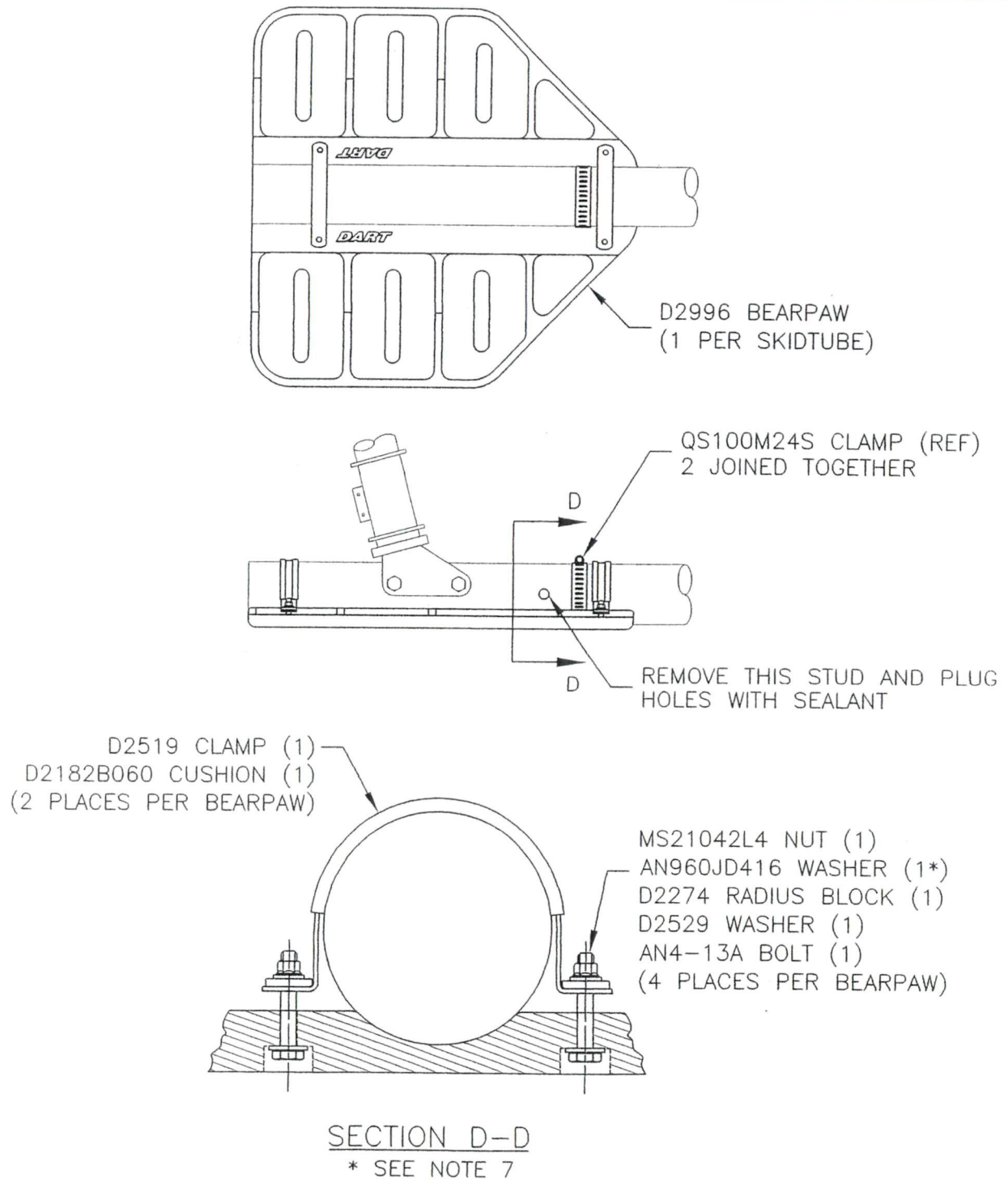
FIGURE 4: D500-572-013 BEARPAW INSTALLATION



SECTION C-C

* SEE NOTE 7

FIGURE 5: D600-572-015 BEARPAW INSTALLATION



4. WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D500-572-011 Bearpaw Installation	8.5 lb 3.86 kg	0.0 in 0.0 m	0.0 lb-kp 0.0 m-kp	130 in 3.30 m	1105 in-lb 12.74 m-kp
D500-572-021 Narrow Bearpaw Installation	7.5 lb 3.41 kg	0.0 in 0.0 m	0.0 lb-kp 0.0 m-kp	130 in 3.30 m	975 in-lb 11.25 m-kp
D500-572-013 Bearpaw Installation	11.4 lb 5.17 kg	0.0 in 0.0 m	0.0 lb-kp 0.0 m-kp	128 in 3.25 m	1459 in-lb 16.80 m-kp
D600-572-015 Bearpaw Installation	11.4 lb 5.17 kg	0.0 in 0.0 m	0.0 lb-kp 0.0 m-kp	122 in 3.10 m	1391 in-lb 16.03 m-kp

5. PARTS LIST

Qty D500 -572 -011	Qty D500 -572 -021	Qty D500 -572 -013	Qty D600 -572 -015	Part Number	Description
X				D500-572-011	BEARPAW INSTALLATION
	X			D500-572-021	NARROW BEARPAW INSTALLATION
		X		D500-572-013	BEARPAW INSTALLATION
			X	D600-572-015	BEARPAW INSTALLATION
2				D2435	BEARPAW
	2			D2671	BEARPAW
		2		D2995	BEARPAW
			2	D2996	BEARPAW
4	4	4		D2182B050	RUBBER CUSHION
			4	D2182B060	RUBBER CUSHION
8	8	8	8	D2274	RADIUS BLOCK
4	4	4		D2438	CLAMP
			4	D2519	CLAMP
8	8	8	8	D2529	WASHER
		8	8	AN4-13A	BOLT
8	8			AN4-15A	BOLT
8	8	8	8	AN960JD416	WASHER
8	8	8	8	MS21042L4	NUT (OR MS21042-4)
2	2			QS200M44S	CLAMP
			4	QS100M24S	CLAMP

Master Document List

Helitowcart Inc.

**Eurocopter AS350/355 Helicopters
Installation of BearPaw Model BP350**

Report: HTC-MDL-BP-R44-1000 (Rev A)

APPROVED BY:

Mirko Zgela

DATE: SEPT 7, 2006

Mirko Zgela
Design Approval Representative DAR #310

Revision	Revision Date	Revision of Entry	Entered by

1.0 MASTER DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
AAC-CPL-BP-R44-1000	Compliance Plan - Robinson R44 Helicopters - Installation of Bear Paw Model BP44	NC	DAR 310	July 4, 2006
HTC-314-0020-00-A	BearPaw Model BP350 – Installation Instructions – AS350/355	A	DAR 310	Sept 6, 2006
AAC-STR-BP-R44-1000	Structural Substantiation – Helitowcart Inc. BearPaw Model BP44	NC	DAR 310	July 4, 2006
AAC-STR-C-FBL-C	Simple External Modification – Applicant's Flight Test Plan/Report	NC	DAR 310	Aug 4, 2006

2.0 MASTER DRAWINGS

Drawings #	Title	Revision Status	Approval by	Date
VNR083	BearPaw Assembly	R05	DAR 310	Sept 6, 2006
VNR084	BearPaw – Iceblade	R01	DAR 310	Apr 24, 2006
VNR085	BearPaw – Iceblade Threaded Rod	R01	DAR 310	Apr 24, 2006
VNR086	BearPaw – Iceblade Assembly	R01	DAR 310	Apr 24, 2006
VNR106	BearPaw - Pad	R05	DAR 310	Apr 24, 2006
VNR107	BearPaw – U Shaped Clip	R04	DAR 310	July 31, 2006
VNR089	Bearpaw – Slotted Clip Support	R04	DAR 310	July 31, 2006
VNR099	Filler Block 1/4"	R01	DAR 310	Aug 8, 2006
VNR103	Filler Block 3/32"	R01	DAR 310	Sept 6, 2006
VNR104	Filler Block 1/8"	R01	DAR 310	Sept 6, 2006

3.0 REFERENCE DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
314-0009-01-A	Ultra High Molecular Weight Polyethylene – Typical Properties	A	N/A	May 24, 2006
314-0008-01-A	Propriétés du UHMW TIVAR	A	N/A	May 24, 2006
314-0017-05-A	Heat Shrink Specifications	A	N/A	Sept 6, 2006

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Annex B (BearPaw Pad Drawing)	

INTRODUCTION

Scope

This installation instruction describes the step-by-step approach to install and to perform maintenance of the Helitowcart BearPaw for your AS 350/355.

General

The Helitowcart BearPaw is made of machined UHMW TIVAR® polymer sheet. This material combines high-impact performance, low friction and good resistance to chemical. Its high durability will provide superior performance to your Robinson helicopter. Any question regarding the Helitowcart BearPaw system shall be directed to Helitowcart Customer Support as indicated in Table (1):

Table 1 – Helitowcart Customer Support

Care of	Mailing Address	Phone, Fax & Email:
Customer Support Helitowcart BearPaw Helitowcart (Vanair inc)	860 Marie-Victorin St-Nicholas, Levis, Quebec, Canada, G7A 3S9	Tel:1 (418) 561-4512 Fax:1 (418) 836-2291 info@helitowcart.com

Helicopter Effectivity

This installation instruction applies to the following EUROCOPTER Helicopters:

Table 2 – Eurocopter Helicopter Effectivity

A/C Model	Serial no.	Type Certificate Data Sheet
???	???	???
???	???	???

Installer Responsibilities

The installer shall ensure that the installation of the Helitowcart BearPaw does not conflict with any other part of the helicopter configuration. Technicians performing this installation should be familiar with A/C work and should have been familiarized with the different Helitowcart BearPaw system components prior to performing a first time installation. All steps in this procedure must be followed. Deviations from the procedures may result in potential structural failure or equipment malfunction and will result in a non-compliant installation.

INSTALLATION

BearPaw Installation

Reference Documentation:

- [1] [REDACTED]
[2] Annex A – BearPaw Assembly Drawing (VNR???)

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 1/2" (38mm);
- Remove aft skid wearshoe & re-install the attaching screws. (Can we make provision to keep them on? It has been asked by users)

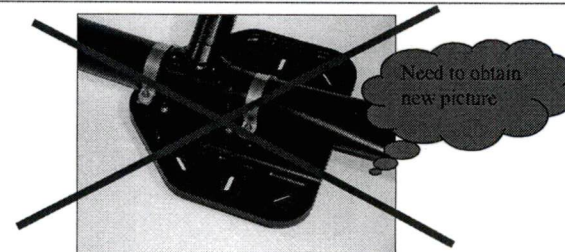
Step 2: BearPaw Preparation

- With IceBlade Option: Install ice blades (Qty:2) under BearPaw pad as per drawing (VNR???) Ref [2];
- With IceBlade Option: Insert washer (Washer P/N 263-0001-17) through threaded part of the ice blade and secure with nut (P/N 262-0001-17);
- Position the BearPaw under skid at the aft intersection with the cross tube as per Figure 1 with narrow edge pointing forward.

Step 3: BearPaw Set Up

- Insert washers (P/N 263-0001-17) through all six bolts: 2x(P/N261-0002-17) & 6x(261-0003-17);
- Insert bolts(P/N261-0002-17) & (P/N 261-0003-17) and washer (Washer P/N 263-0001-17) through BearPaw pad as per drawing (VNR???) Ref [2];
- Insert filler blocks (P/N314-0012-01) & (P/N314-0014-01) at front of BearPaw & insert filler blocks (P/N314-0015-01) at rear of BearPaw as per drawing (VNR???) Ref [2];
- The use of filler blocks mentioned above may be replaced or complemented by the use of washers (P/N 263-0001-17). Bolts (P/N261-0002-17) & (P/N 261-0003-17) may be replaced by longer or shorter AN4 bolts as required.
- Insert both U-shaped clips (P/N 314-0019-15) through bolts: 2x(P/N261-0002-17) & 6x(261-0003-17);
- Insert slotted clip supports (P/N 314-0007-15) through all six bolts. Position slotted clip supports with rounded edge toward helicopter skid;
- Insert washer (P/N 263-0001-17) & screw nuts (P/N 262-0001-17) for a tight fit. Max. torque on nuts 60 in.-lb;
- Remove helicopter from lift;
- Amend Weight & Balance records as required using data provided in Table 3.

Figure 1 - Installed BearPaw Model BP44



BearPaw Removal

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 1/2" (38mm);

Step 2: BearPaw Removal

- Remove nuts (P/N 262-0001-17), slotted clip support (P/N 314-0007-15) on U-shaped clips (P/N 314-0019-15);
- Remove U-shaped clips (P/N 314-0006-15), filler blocks (P/N314-0012-01), (P/N314-0014-01) & (P/N314-0015-01) and remove BearPaw pad (P/N 314-0001-01);
- Inspect skid tubes to confirm serviceability
- Re-install all wear shoe with screws as per reference [1]
- Complete installation by putting helicopter back to normal position by removing lift status;
- Amend Weight & Balance records as required.

Weight & Balance

The following information should be used to amend the helicopter weight and balance information following the installation or removal:

Table 3 – Weight & Balance Data

Item	Weight	Lateral		Longitudinal	
		Arm	Moment	Arm	Moment
Helitowcart BearPaw Model BP350	?? Lb ?? Kg	?? in 10.0mm	?? Lb-in 10.0mm-Kg	?? ?? m	?? in-lb ?? m-Kg

Parts Lists

The Helitowcart BearPaw detailed parts list is as follow:

Table 4 – Parts List

Description	Qty	Part No.	Drawing no./name
BearPaw Model BP350	1	112-0002-00	VNR?? / BearPaw Assembly
BearPaw pad	1	314-0018-01	VNR106 / BearPaw BP350 - Pad
U Shaped Clips	3	314-0019-15	VNR107 / BearPaw BP350 - U Shaped Clips
Slotted Clip Support	6	314-0007-15	VNR089 / BearPaw - Slotted Clip Support
Filler blocks 1/4"	6	314-0012-01	VNR099 / BearPaw – Filler block 1/4"
Filler blocks 3/32"	2	314-0014-01	VNR103 / BearPaw – Filler block 3/32"
Filler blocks 1/8"	2	314-0015-01	VNR104 / BearPaw – Filler block 1/8"
Bolts	2	261-0002-17	Bolt- AN4-15
Bolts	6	261-0003-17	Bolt- AN4-16
Nuts	6	262-0001-17	Nut- MS20-365-428
Washers	12	263-0001-17	Washer – AN960-416
Shrink	3	314-0016-00	BearPaw – Shrink Specifications & Installation
IceBlade Option Model OIB	2	314-0005-15	VNR086 / IceBlade Assembly
Nuts	4	262-0001-17	Nut- MS20-365-428
Washers	4	263-0001-17	Washer – AN960-416

INSPECTION

Life Limited Items

Three are no life limited items for the Helitowcart BearPaw.

Pre-Flight

Before each flight the following items should be inspected:

- Check that attachment bolts are installed and secured,
- Check that BearPaws are free from visible damage,
- If damage is found, verify allowable damage according to:
 Table 5 – Tolerances for cracks & wear, &
 Annex B – BearPaw Allowable Damage Drawing (VNR?? page 2 of 2???)

Periodic Inspection Schedule

- The Helitowcart BearPaw shall be inspected every 300 flying hours or yearly whichever comes first.
- The Helitowcart BearPaw can be inspected concurrently with the helicopter R44 landing gear inspection.
- Recommended tolerance for performance of inspection is +/- 10% of the 300 hours period.
- Following an inspection, subsequent interval shall be adjusted to meet the original schedule from time of inspection. If inspection is performed earlier than the 10% tolerance, then following inspections shall be scheduled not to exceed the above mentioned tolerance.

300 Hour or Yearly Inspection Details

- Remove Helitowcart BearPaw: See Section "BearPaw Removal",
- Inspect all parts for damage & wear. See table & figure below for allowable damage,
- Replace all damaged parts,
- Replace parts worn beyond the tolerances indicated below.
- See Tolerances for cracks & wear:
 Table 5 – Tolerances for cracks & wear, &
 Annex B – BearPaw Allowable Damage Drawing (VNR088 page 2 of 2)

Table 5 – Tolerances for Cracks & Wear

Zone	Nominal Dimension (Inches)	Allowable Damage/Wear (Inches)	Cracks
A	0.350	0.050	
B	1.000	0.250	
C	0.375	0.075	Stiffeners: NO cracks in stiffeners Pockets: Cracks are acceptable in the Helitowcart BearPaw pocket areas to a maximum length of 0.5" provided they are 0.25" away from the stiffener radius change. Stop drill cracks with a 0.125" hole.
D	0.350	0.050	
E	N/A	N/A	No cracks allowed in zone E



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

Overhaul Requirements

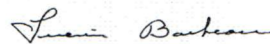
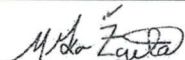
- Not applicable for the designated application of this device.

REVISIONS & APPROVAL

Revisions

Date	Rev	Nature of Revisions
June 12, 2006	A	Initial issue

Approval

Internal Approval :		
Helitowcart inc.	 Lucien Barbeau, President	September 7, 2006 Date:
External Approval :		
Transport Canada	 Mirko Zgela, DAR #310	September 7, 2006

Annex A

See: BearPaw Assembly, drawing no. VNR???

Annex B

See: BearPaw Pad, drawing no. VNR??? Page 2 of 2



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

Annex A
BearPaw Assembly, Drawing no. VNR???.
P/N 112-0002-00-A



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355



314-0020-00 rev A
BearPaw Model BP350
Installation Instructions – AS350/355

Annex B

BearPaw Pad, Drawing no. VNR 222, Page 2 of 2.
P/N 314-0018-01-A



314-0020-00 rev A

BearPaw Model BP350

Installation Instructions – AS350/355

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100 Hour or Yearly Inspection Details	p.5
Overhaul Requirements	p.5
 REVISIONS & APPROVAL	 p.6
Annex A (BearPaw Assembly Drawing)	
Annex B (BearPaw Pad Drawing)	

INTRODUCTION

Scope

This installation instruction describes the step-by-step approach to install and to perform maintenance of the Helitowcart BearPaw for your Robinson R44.

General

The Helitowcart BearPaw is made of machined UHMW TIVAR® polymer sheet. This material combines high-impact performance, low friction and good resistance to chemical. Its high durability will provide superior performance to your Robinson helicopter. Any question regarding the Helitowcart BearPaw system shall be directed to Helitowcart Customer Support as indicated in Table (1):

Table 1 – Helitowcart Customer Support

Care of	Mailing Address	Phone, Fax & Email:
Customer Support Helitowcart BearPaw Helitowcart (Vanair inc)	860 Marie-Victorin St-Nicholas, Levis, Quebec, Canada, G7A 3S9	Tel:1 (418) 561-4512 Fax:1 (418) 836-2291 info@helitowcart.com

Helicopter Effectivity

This installation instruction applies to the following ROBINSON Helicopters:

Table 2 – Robinson Helicopter Effectivity

A/C Model	Serial no.	Type Certificate Data Sheet
R44	0271 thru 9999	H11NM
R44 II	1140, 10001 and subsequent	H11NM

Installer Responsibilities

The installer shall ensure that the installation of the Helitowcart BearPaw does not conflict with any other part of the helicopter configuration. Technicians performing this installation should be familiar with A/C work and should have been familiarized with the different Helitowcart BearPaw system components prior to performing a first time installation. All steps in this procedure must be followed. Deviations from the procedures may result in potential structural failure or equipment malfunction and will result in a non-compliant installation.

INSTALLATION

BearPaw Installation

Reference Documentation:

- [1] Robinson R44 - Maintenance Manual & Instruction for Continued Airworthiness. RTR460.
[2] Annex A – BearPaw Assembly Drawing (VNR083)

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);
- Remove aft skid wearshoe & re-install the attaching screws.

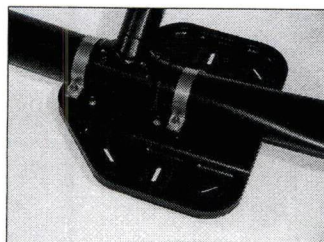
Step 2: BearPaw Preparation

- With IceBlade Option: Install ice blades (Qty:2) under BearPaw pad as per drawing (VNR083) Ref [2];
- With IceBlade Option: Insert washer (Washer P/N 263-0001-17) through threaded part of the ice blade and secure with nut (P/N 262-0001-17);
- Position the BearPaw under skid at the aft intersection with the cross tube as per figure 1 with narrow edge pointing forward.

Step 3: BearPaw Set Up

- Insert washers (P/N 263-0001-17) through all four bolts: 2x(P/N261-0002-17) & 2x(261-0003-17);
- Insert bolts (P/N261-0002-17) & (261-0003-17) and washer (Washer P/N 263-0001-17) through BearPaw pad as per drawing (VNR083) Ref [2];
- Insert filler blocks (P/N314-0012-01) & (P/N314-0014-01) at front of BearPaw & Insert filler blocks (P/N314-0015-01) at rear of BearPaw as per drawing (VNR083) Ref [2];
- The use of filler blocks mentioned above may be replaced or complemented by the use of washers (P/N 263-0001-17). Bolts (P/N261-0002-17) & (261-0003-17) may be replaced by longer or shorter AN4 bolts as required.
- Insert both U-shaped clips (P/N 314-0006-15) through bolts: 2x(P/N261-0002-17) & 2x(261-0003-17);
- Insert slotted clip supports (P/N 314-0007-15) through all four bolts. Position slotted clip supports with rounded edge toward helicopter skid;
- Insert washer (P/N 263-0001-17) & screw nuts (P/N 262-0001-17) for a tight fit. Max. torque on nuts 60 in.-lb;
- Remove helicopter from lift;
- Amend Weight & Balance records as required using data provided in Table 3.

Figure 1 - Installed BearPaw Model BP44



BearPaw Removal

Step 1: Helicopter Preparation

- Ensure the helicopter is safe for maintenance;
- Lift the helicopter using the manufacturer recommended practice provided in Ref [1] to allow a clearance of the skid in the area of the aft cross tube of approximately 1 ½" (38mm);

Step 2: BearPaw Removal

- Remove nuts (P/N 262-0001-17), slotted clip support (P/N 314-0007-15) on U-shaped clips (P/N 314-0006-15);
- Remove U-shaped clips (P/N 314-0006-15), filler blocks (P/N314-0012-01), (P/N314-0014-01) & (P/N314-0015-01) and remove BearPaw pad (P/N 314-0001-01);
- Inspect skid tubes to confirm serviceability
- Re-install aft wearshoe with screws as per reference [1];
- Complete installation by putting helicopter back to normal position by removing lift status;
- Amend Weight & Balance records as required.

Weight & Balance

The following information should be used to amend the helicopter weight and balance information following the installation or removal:

Table 3 – Weight & Balance Data

Item	Weight	Lateral		Longitudinal	
		Arm	Moment	Arm	Moment
Helitowcart BearPaw Model BP44	5.9 Lb 2.7 Kg	0.0in. (0.0mm)	0.0lb-kG (0.0mm-kG)	128.5 in 3.26 m	758.1 in-lb 8.8 m-kG

Parts Lists

The Helitowcart BearPaw detailed parts list is as follow:

Table 4 – Parts List

Description	Qty	Part No.	Drawing no./name
BearPaw Model BP44	1	112-0001-00	VNR083 / BearPaw Assembly
BearPaw pad	1	314-0001-01	VNR088 / BearPaw - Pad
U Shaped Clips	2	314-0006-15	VNR087 / BearPaw - U Shaped Clips
Slotted Clip Support	4	314-0007-15	VNR089 / BearPaw - Slotted Clip Support
Filler blocks 1/4"	2	314-0012-01	VNR099 / BearPaw - Filler block 1/4"
Filler blocks 3/32"	2	314-0014-01	VNR103 / BearPaw - Filler block 3/32"
Filler blocks 1/8"	2	314-0015-01	VNR104 / BearPaw - Filler block 1/8"
Bolts	2	261-0002-17	Bolt- AN4-15
Bolts	2	261-0003-17	Bolt- AN4-16
Nuts	4	262-0001-17	Nut- MS20-365-428
Washers	8	263-0001-17	Washer - AN960-416
Shrink	2	314-0016-00	BearPaw - Shrink Specifications & Installation
IceBlade Option Model OIB	2	314-0005-15	VNR086 / IceBlade Assembly
Nuts	4	262-0001-17	Nut- MS20-365-428
Washers	4	263-0001-17	Washer - AN960-416

INSPECTION

Life Limited Items

Three are no life limited items for the Helitowcart BearPaw.

Pre-Flight

Before each flight the following items should be inspected:

- Check that attachment bolts are installed and secured,
- Check that BearPaws are free from visible damage,
- If damage is found, verify allowable damage according to:
 Table 5 – Tolerances for cracks & wear, &
 Annex B – BearPaw Allowable Damage Drawing (VNR088 page 2 of 2)

Periodic Inspection Schedule

- The Helitowcart BearPaw shall be inspected every 300 flying hours or yearly whichever comes first.
- The Helitowcart BearPaw can be inspected concurrently with the R44 landing gear inspection.
- Recommended tolerance for performance of inspection is +/- 10% of the 300 hours period.
- Following an inspection, subsequent interval shall be adjusted to meet the original schedule from time of inspection. If inspection is performed earlier than the 10% tolerance, then following inspections shall be scheduled not to exceed the above mentioned tolerance.

300 Hour or Yearly Inspection Details

- Remove Helitowcart BearPaw: See Section "BearPaw Removal",
- Inspect all parts for damage & wear. See table & figure below for allowable damage,
- Replace all damaged parts,
- Replace parts worn beyond the tolerances indicated below.
- See Tolerances for cracks & wear:
 Table 5 – Tolerances for cracks & wear, &
 Annex B – BearPaw Allowable Damage Drawing (VNR088 page 2 of 2)

Table 5 – Tolerances for Cracks & Wear

Zone	Nominal Dimension (Inches)	Allowable Damage/Wear (Inches)	Cracks
A	0,350	0,050	
B	1,000	0,250	
C	0,375	0,075	<u>Stiffeners:</u> NO cracks in stiffeners. <u>Pockets:</u> Cracks are acceptable in the Helitowcart BearPaw pocket areas to a maximum length of 0,5" provided they are 0,25" away from the stiffener radius change. Stop drill cracks with a 0,125" hole.
D	0,350	0,050	
E	N/A	N/A	No cracks allowed in zone E

Overhaul Requirements

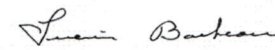
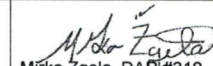
- Not applicable for the designated application of this device.

REVISIONS & APPROVAL

Revisions

Date	Rev	Nature of Revisions
September 7, 2006	B	- Added filler blocks and heat shrink to product list. - Modified recommended bolt models (lengthened) - Revised inspection requirements from 100 hour to 300 hour intervals. - Identification of the IceBlade assembly as an optional feature.
June 12, 2006	A	Initial issue

Approval

Internal Approval :		
Helitowcart inc.	 Lucien Barbeau, President	September 7, 2006
External Approval :		
Transport Canada	 Mirko Zgela, DAR #310	September 7, 2006

Annex A

See: BearPaw Assembly, drawing no. VNR083.

Annex B

See: BearPaw Pad, drawing no. VNR088. Page 2 of 2.



314-0011-00-B
BearPaw Model BP44
Installation Instructions - R44

Annex A

BearPaw Assembly, Drawing no. VNR083.
P/N 112-0001-00-C



314-0011-00-B
BearPaw Model BP44
Installation Instructions - R44



314-0011-00-B
BearPaw Model BP44
Installation Instructions - R44



314-0011-00-B
BearPaw Model BP44
Installation Instructions - R44

Annex B

BearPaw Pad, Drawing no. VNR088. Page 2 of 2.
P/N 314-0001-01-A

Reçu
26.9.2006
11:15

FAX TRANSMISSION

Date: 26 sept., 2006

Pages: 4

To: **Guillaume Lapointe**

From : Nathalie Barbeau, Vanair inc.

Object: **Demande de création & modifications de dessins**

Allo Guillaume,

J'ai enfin embarqué dans le dossier des nouveaux bearpaw pour AS350 et AS355.

Trouve ci-joint mes annotations pour raffiner les dessins et pour ajout des no de produits.

J'ai aussi fait un préliminaire pour créer un dessin d'ensemble de ce nouveau modèle.

Bien que ce produit va servir pour les deux modèles d'hélico, on va l'appeler le BP350.

Si possible m'informer par email de la date prévue de réalisation de ces dessins.

Merci beaucoup!



Nathalie Barbeau

Marketing Manager,

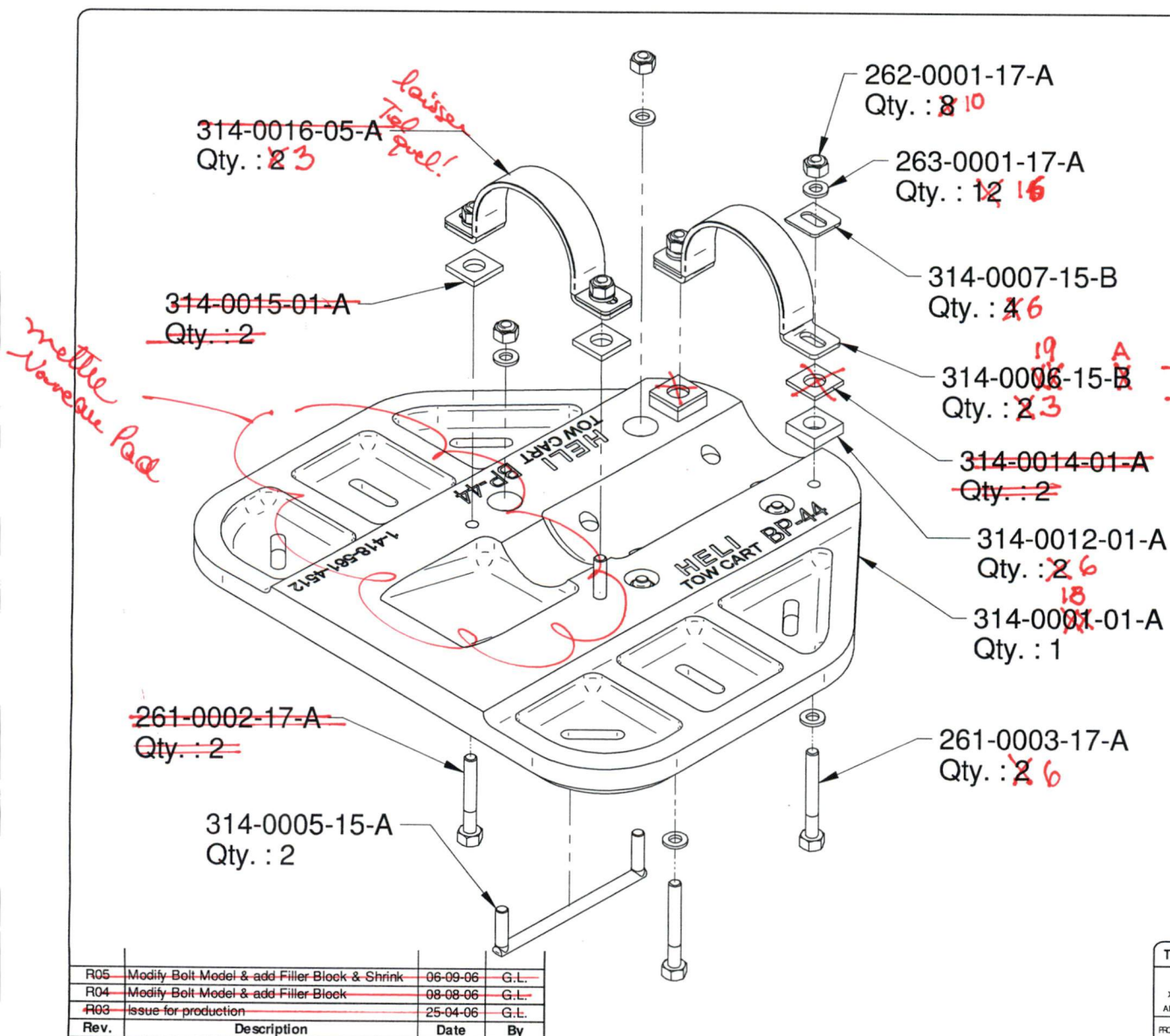
Helitowcart (Vanair inc.)

nbarbeau@helitowcart.com

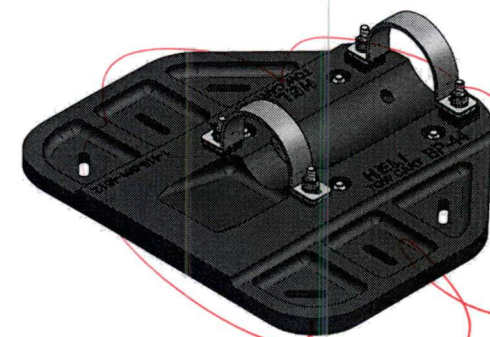
info@helitowcart.com

INFO POUR FAIRE DESSIN D'ASSEMBLAGE DU BP350.

2006.09.26/12B



N°	Qty	Description	Part #
1*	1	Bearpaw - Pad	314-0001-01-A
2*	2	Bearpaw - Iceblade assembly	314-0005-15-A
3*	2 3	Bearpaw - U Shaped clip	314-0006-15-A
4*	4 6	Bearpaw - Slotted clip support	314-0007-15-B
5*	8 10	Nut MS20-365-428	262-0001-17-A
6*	12 16	Washer AN960-416	263-0001-17-A
7*	2	Bolt AN4-15A	261-0002-17-A
8*	2 6	Bearpaw - Filler Block 1/4"	314-0012-01-A
9*	2 6	Bolt AN4-16A	261-0003-17-A
10*	2 3	Bearpaw - Shrink 1"x5"	314-0016-05-A
11*	2	Bearpaw - Filler Block 1/8"	314-0015-01-A
12*	2	Bearpaw - Filler Block 3/32"	314-0014-01-A



NOTE : Iceblade assembly can be omitted from installation (Optional)

Rev.	Description	Date	By
R05	Modify Bolt Model & add Filler Block & Shrink	06-09-06	G.L.
R04	Modify Bolt Model & add Filler Block	08-08-06	G.L.
R03	Issue for production	25-04-06	G.L.

TOLERANCES 1/X ± 1/32" X/XX ± 0.010" X/XXX ± 0.005" ANGLE ± 1°	Titre / Title Bearpaw Assembly BP350		Matériau / Materials N/A		
	Dessiné par / Drawing by G. Lapointe	Date (yyyy-mm-dd) 2006-04-25	Format B	Echelle / Scale N/A	Page # 1 de 1
	Vérifié par / Checked by [Signature]	Date (yyyy-mm-dd) [Date]	Numéro de dessin / Drawing Number VNR009 ?	Row # R05 ?	Row # A
	Approuvé par / Approved by [Signature]	Date (yyyy-mm-dd) [Date]	Numéro de pièce / Part Number 112-0001-00-C	Row # A	Row # A

112-0002-00

R $\frac{3}{32}$ " max.
Pliage

R1.628

.828

(.109)
12 Gage

R $\frac{3}{16}$ "

Ø .255

2.05

4.10

.20

.20



Vanair Inc.
860, Marie-Victorin
St-Nicolas, Lévis (Québec)
Canada, G7A 3S9
Tél. (418) 561-4512
Fax (418) 836-2291
www.helitowcart.com

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COPYING, USING OR
MODIFYING.

TOLERANCES

X/X ± 1/32"
X.X ± 1/64"
X.XX ± 0.010"
X.XXX ± 0.005"
Finish

ANGLES ± 1°

Titre / Title:

Bearpaw 350/355 - Clamp

Dessiné par / Drawing by:

G.Lapointe

Vérfié par / Checker by:

Approuvé par / Approved by:

Date: (mm/dd/yyyy)

9/19/2006

Date: (mm/dd/yyyy)

Date: (mm/dd/yyyy)

Format:

A

Dessin # / Drawing #:

VNR107

Pièce # / Part #:

~~VNR107~~

Matériel / Material:

SST 304 12ga

Echelle / Scale:

1:1

Page:

1

Rev #:

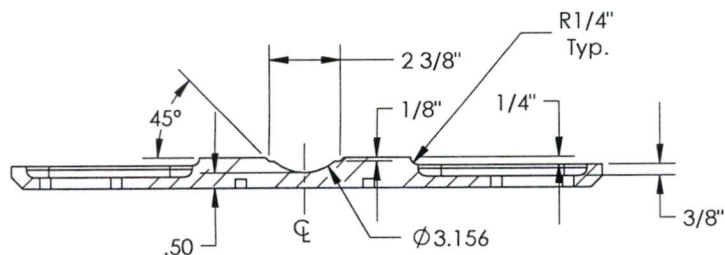
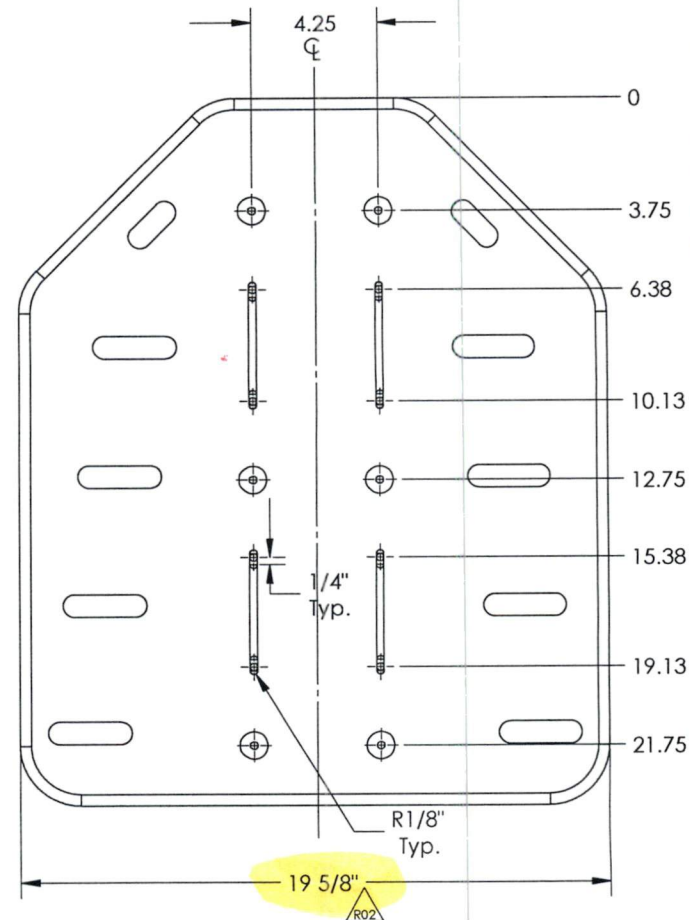
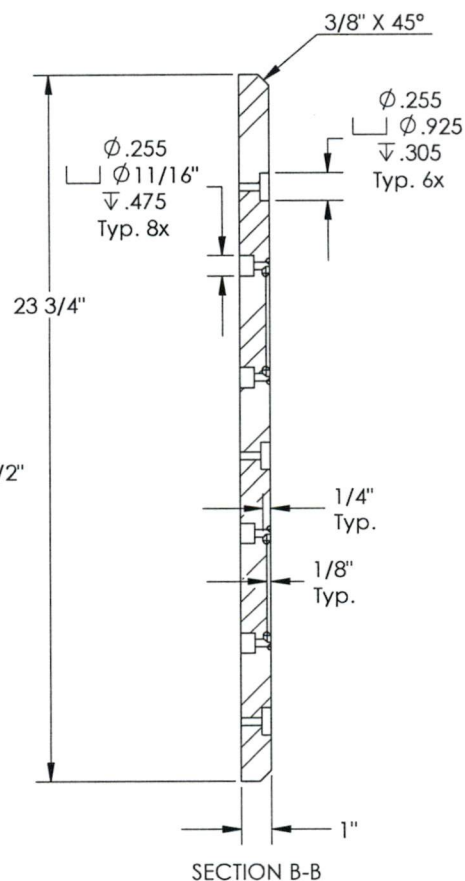
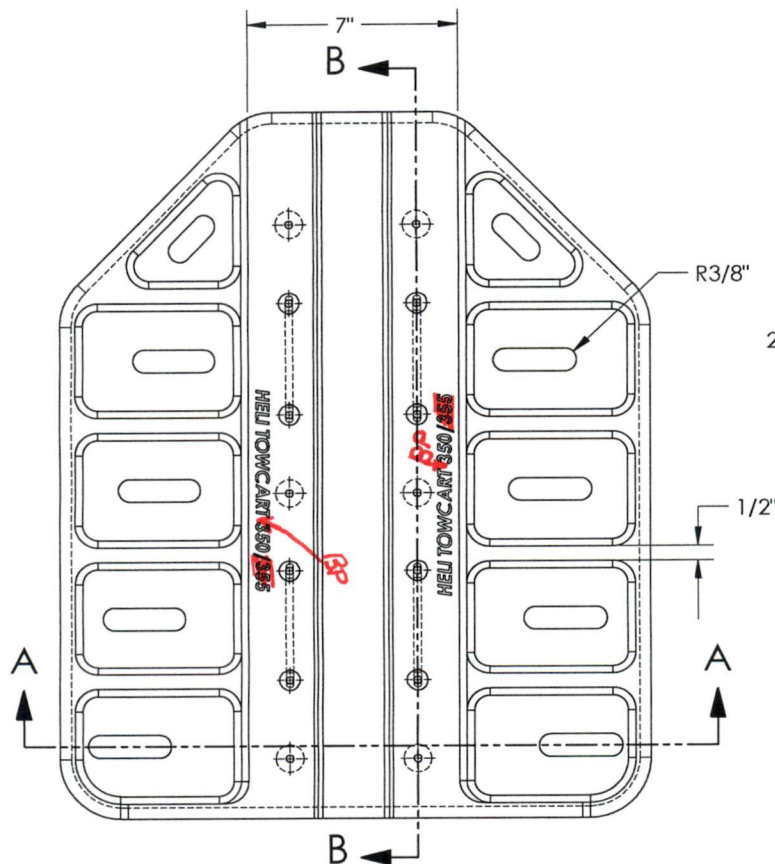
R01

Rev #:

A

Rev.	Description	Date	Par
R01	Émission originale	18-sept.-06	G.L.

314-0019-15



R02	Réduire Largeur - Écart 20"	26-sept.-06	G.L.
R01	Émission originale	18-sept.-06	G.L.
Rev.	Description	Date	Par

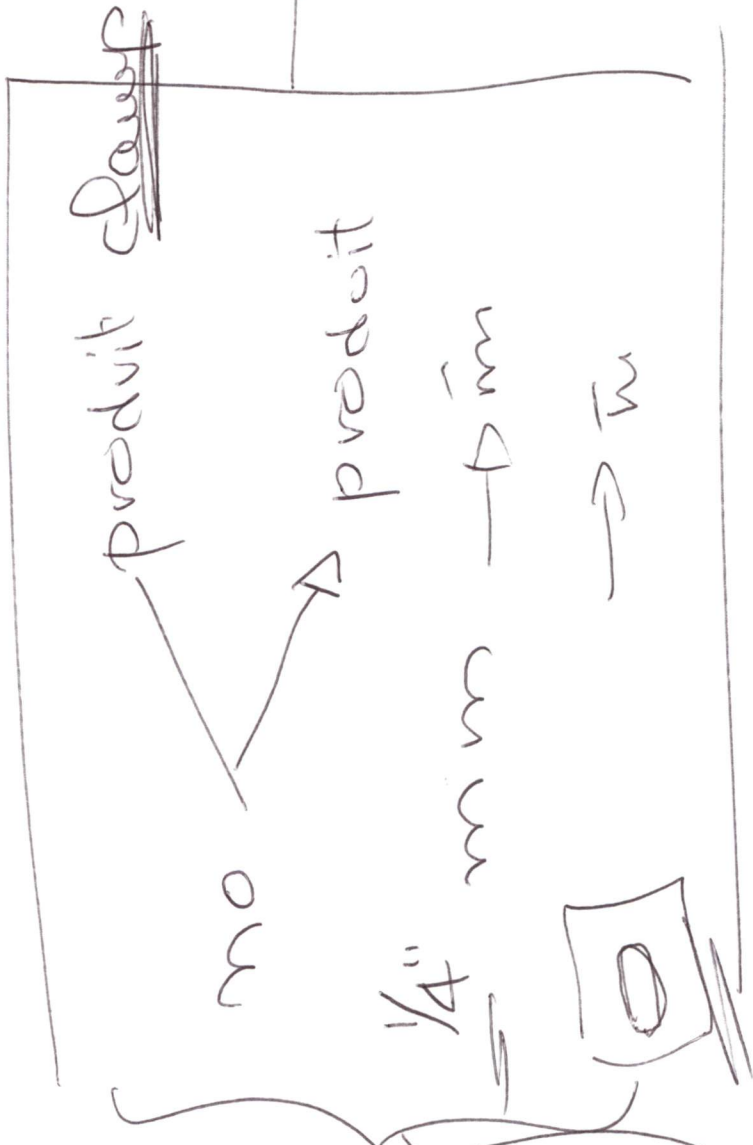
SECTION A-A

TOLERANCES X/X ± 1/32" X.X ± 1/64" X.XX ± 0.010" X.XXX ± 0.005"		Angles ± 1° Finish		Material / Matière: UHMW Black	
Titre / Title: Bearpaw 350/355 - Pad		Date: 9/26/2006 Format: B		Échelle / Scale: 1:4 # Page: 1	
Dessiné par / Drawing by: G.Lapointe		Date: 9/26/2006 Format: B		Échelle / Scale: 1:4 # Page: 1	
Vérifié par / Checked by:		Date:		Dessin # / Drawing #: VNR106	
Approuvé par / Approved by:		Date:		Pièce # / Part #: VNR106	

314.0018-01.1

Little Dossini for New Britain
 75350

Hi pad → no



16 boole → m
icecube → ice m

Aussi Dessins
 sur mail
 de thillauer

From: Guillaume Lapointe [glapointe@amecusinage.com]

Sent: September 26, 2006 8:05 AM

To: 'Nathalie Barbeau'; 'Lucien Barbeau'

Subject: Modification du Bearpaw 350

Bonjour Voici le dessin et le 3D révisé la largeur passe de 20 pouce à 19.625.

VNR 106
R02
ell

Merci.

Guillaume Lapointe

Estimateur-chargé de projet aux ventes



(418) 878-4133, poste 223

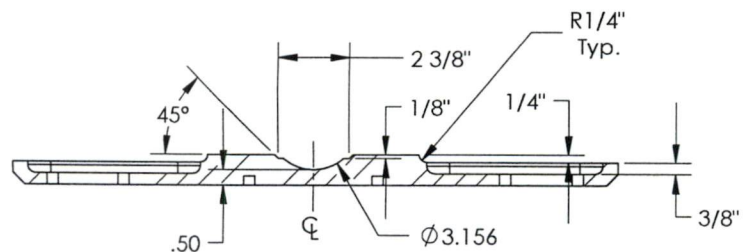
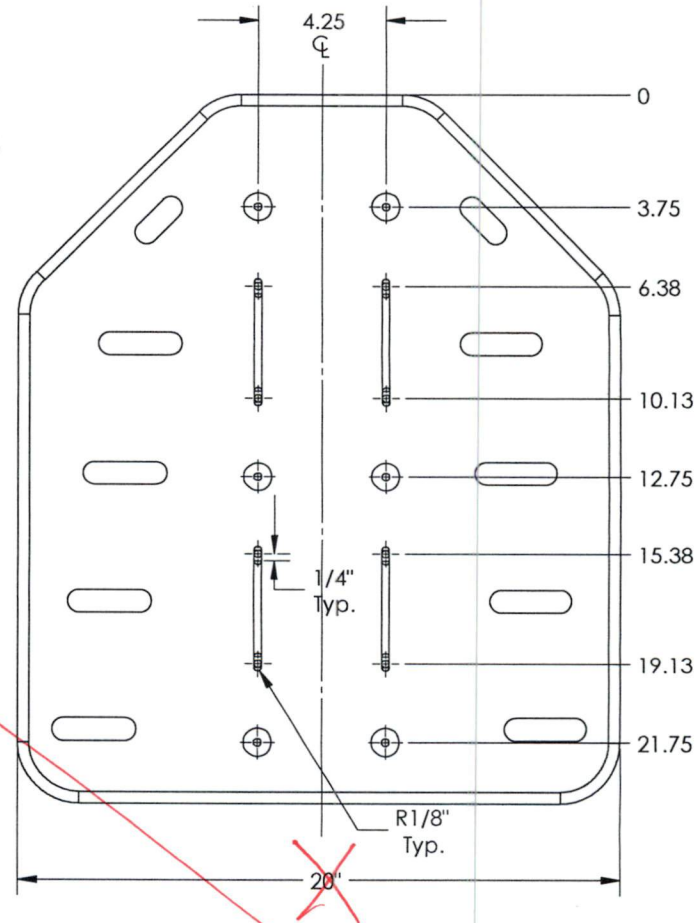
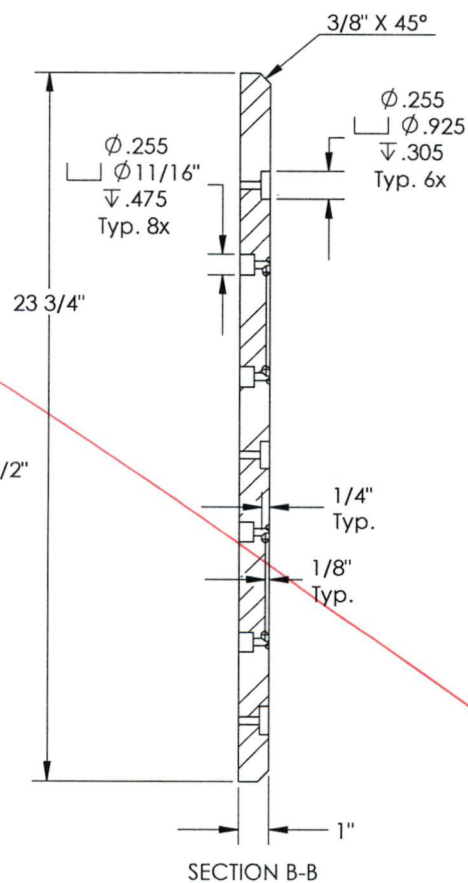
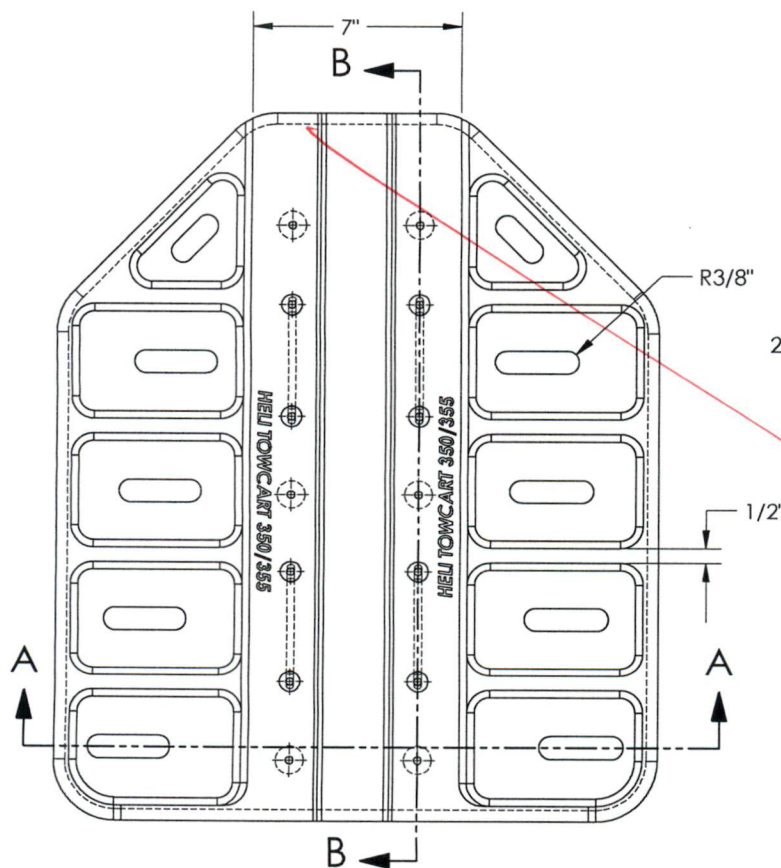
(418) 878-2536

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SECTION A-A

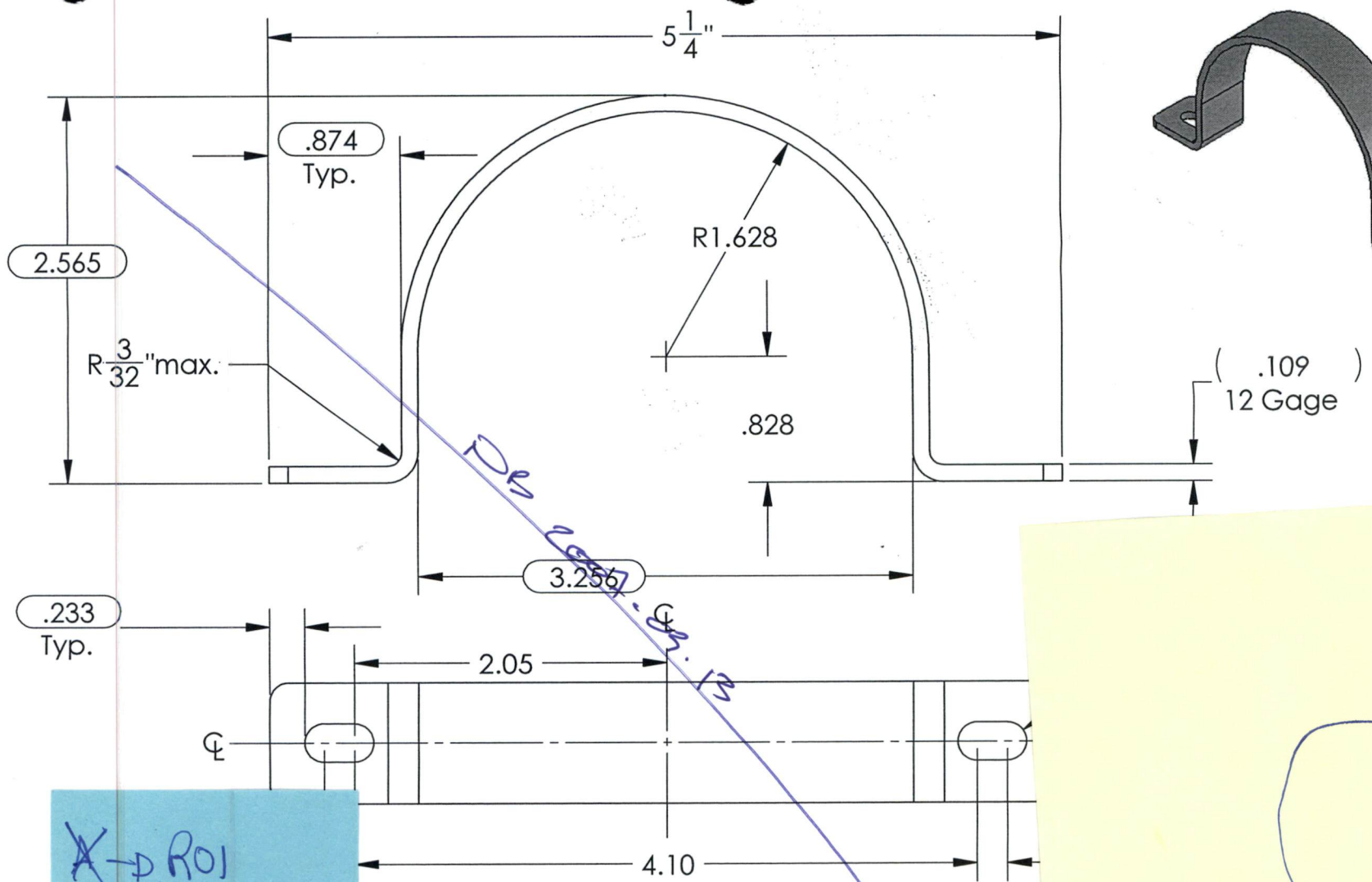


R01	Emission originale	18-sept.-06	G.L.
Rev.	Description	Date	Par

TOLERANCES XX ± 1/32" XX ± 1/64" XXX ± 0.010" XXXX ± 0.005"		Title / Title: Bearpaw 350/355 - Pad		Date: (mm/dd/yyyy) 9/19/2006		Format: B		Material / Material: UHMW Black	
Dessiné par / Drawing by: G.Lapointe		Date: (mm/dd/yyyy) 9/19/2006		Format: B		Echelle / Scale: 1:4		# Page: 1	
Vérifié par / Checker by: G.Lapointe		Date: (mm/dd/yyyy)		Dessin # / Drawing #: VNR106		Rev #: R01		Rev #: R01	
Approuvé par / Approved by:		Date: (mm/dd/yyyy)		Pièce # / Part #: VNR106		Rev #:		Rev #:	

Vanair inc.
 860, Marie-Victorin
 St-Nicolas, Lévis (Québec)
 Canada, G7A 3S9
 Tél: (418) 561-4512
 Fax: (418) 836-2291
 www.helitowcart.com

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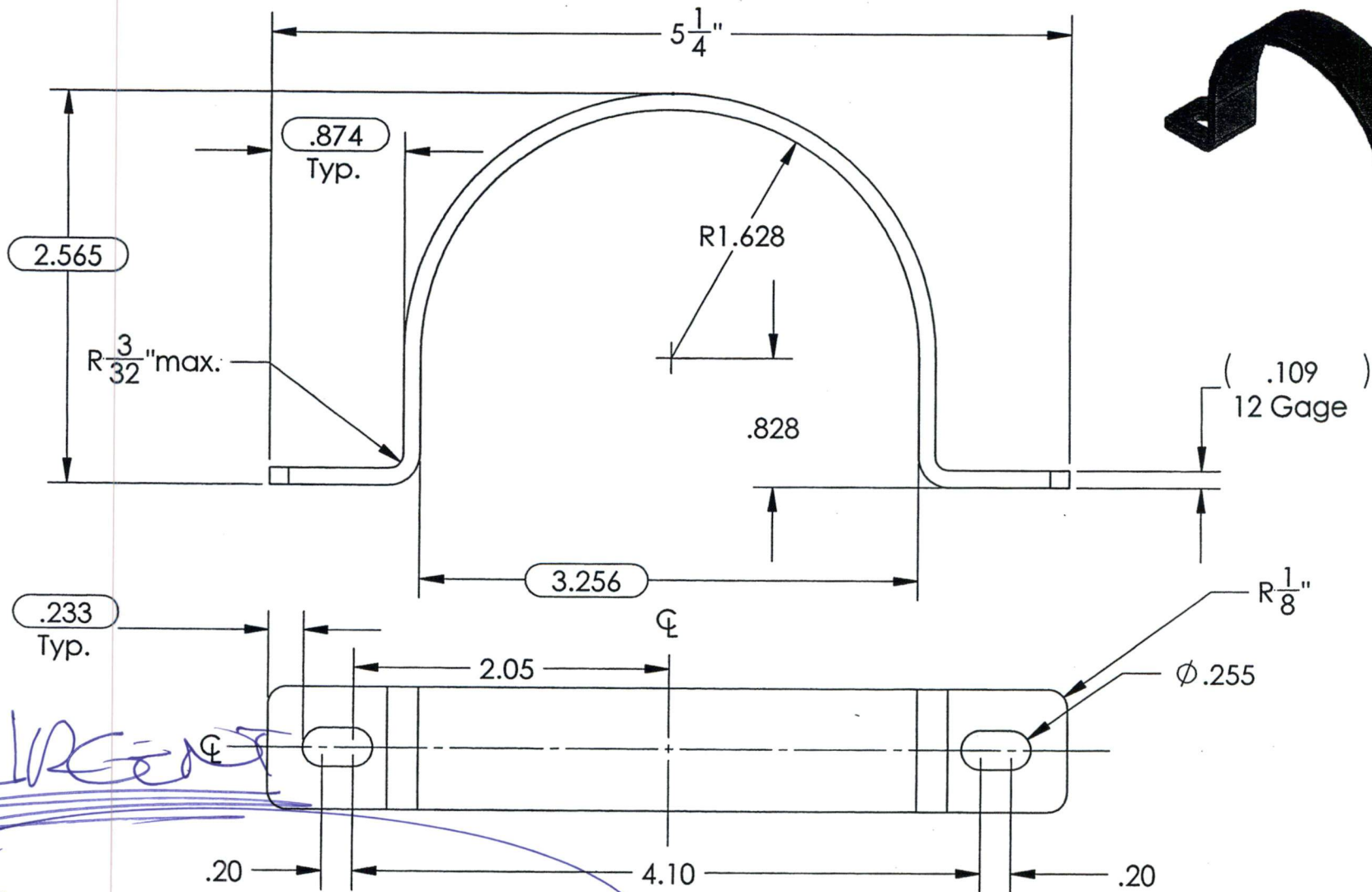
X → ROI
 date 10-03-06
 G. Lapointe

(Handwritten note on yellow paper)
 D

B	Change bolt size	10/03/06	G.L.
A	Initial Issue	09/29/06	G.L.
Rev.	Description	Date	By

TOLERANCES		Titre / Title:		Matériel / Material:	
X/X	± 1/32"	Bearpaw BP-350 - U shaped clip		SST 304 12ga	
X.X	± 1/64"	Dessiné par / Drawing by:	Date: (mm/dd/yyyy)	Format:	Echelle / Scale:
X.XX	± 0.010"	G.Lapointe	10/03/06	A	1:1
X.XXX	± 0.005"	Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Dessin # / Drawing #:	# Page:
Finish				VNR107	1
ANGLES ± 1°		Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #:	Rev #:
		G. Lapointe	10.07.2006	314-0019-15	A

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878.2536

10. 03. 06

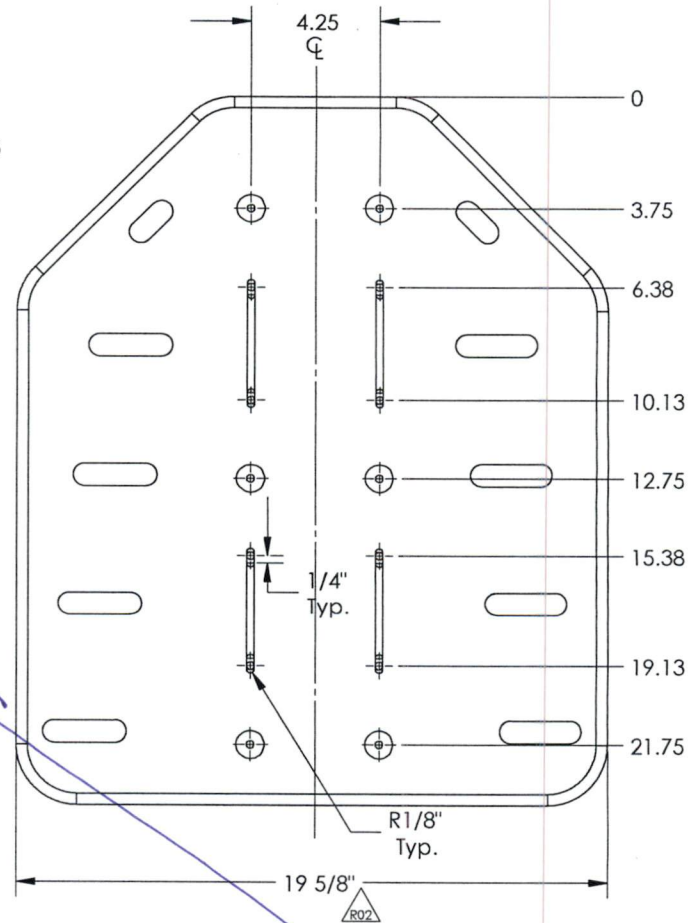
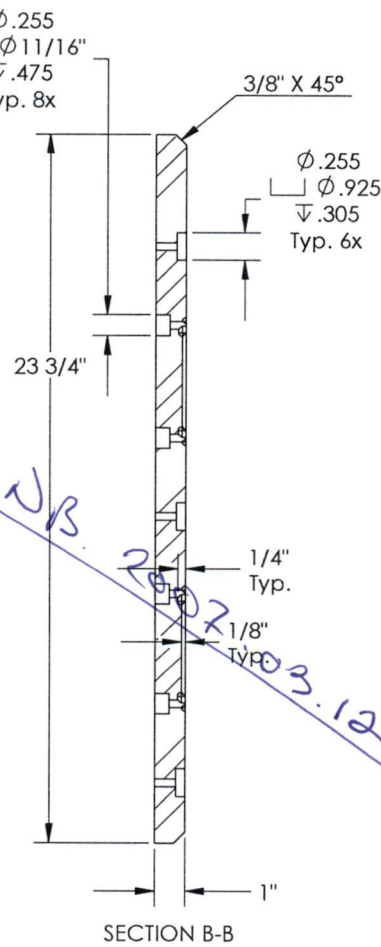
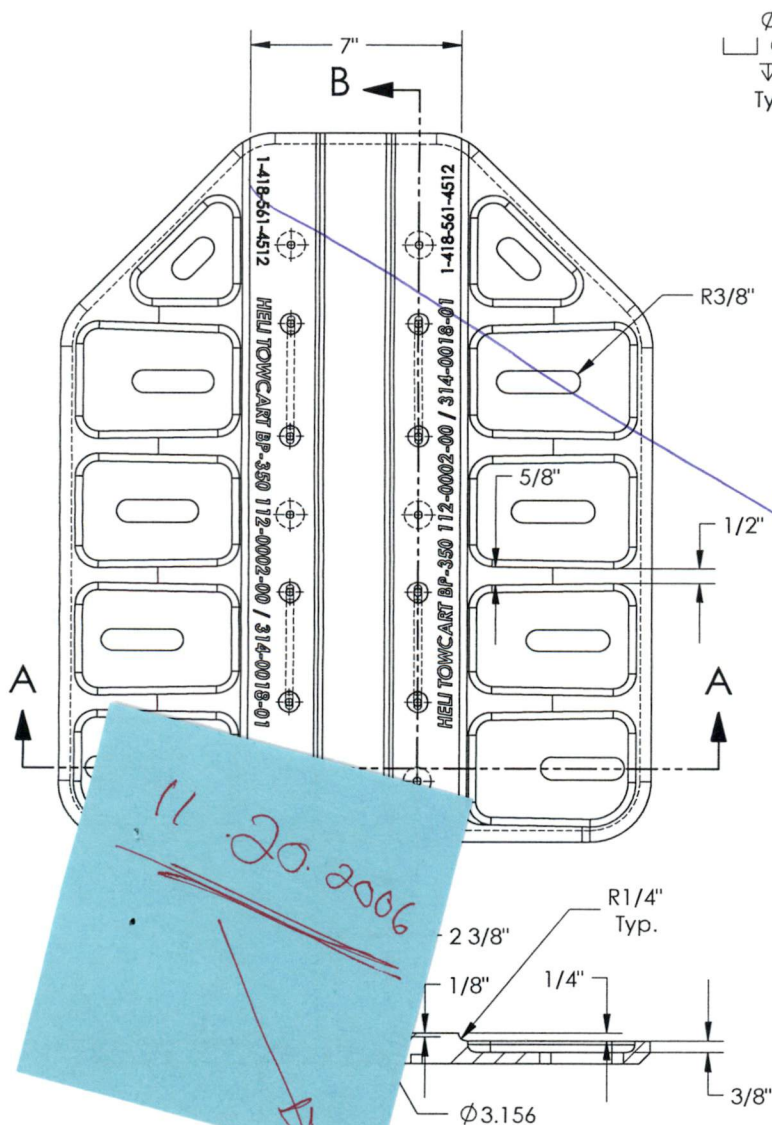
éliminer cette
lique

TOLERANCES		Titre / Title: Bearpaw BP-350 - U shaped clip		Matériel / Material: SST 304 12ga	
X/X	± 1/32"	Dessiné par / Drawing by:	Date: (mm/dd/yyyy)	Format:	Echelle / Scale:
X.X	± 1/64"	G.Lapointe	10/03/06	A	1:1
X.XX	± 0.010"	Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Dessin # / Drawing #:	Rev #:
X.XXX	± 0.005"			VNR107	R01
Finish		Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #:	Rev #:
ANGLES ± 1°		J. Lapointe	10.07.2006	314-0019-15-A	A

HELIX TOW CART

Vanair inc.
860, Marie-Victorin
St-Nicolas, Lévis (Québec)
Canada, G7A 3S9
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Note :
 - Raw material specification :
 UHMW Polyethylene Sheet 1"
 - Machined From File :
 VNR106.SLDPR
 - Break corner 0.01 x 45 deg Typ.
 - If no indicated dimension,
 Follow 3D file Specs.

R02	Smaller - was 20"	26-sept.-06	G.L.
R01	Initial issue	18-sept.-06	G.L.
Rev.	Description	Date	Par

SECTION A-A

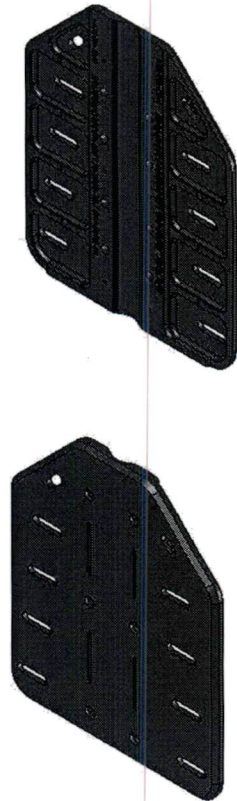
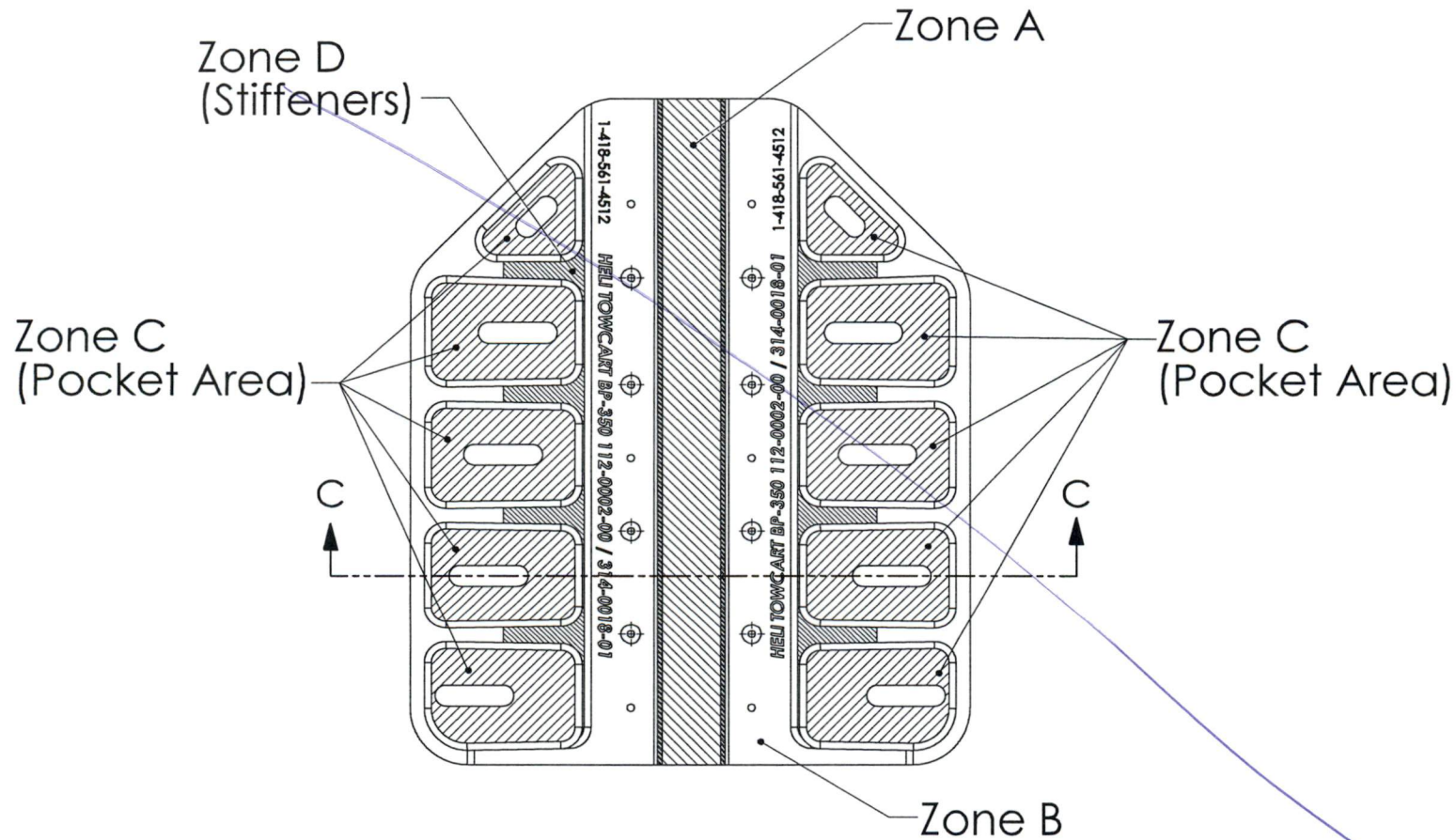
SECTION B-B



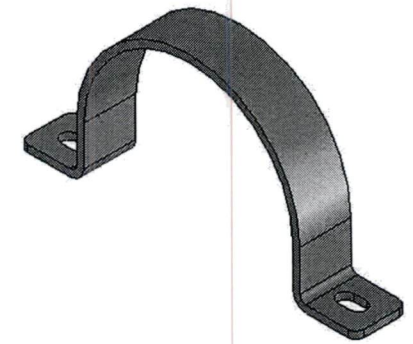
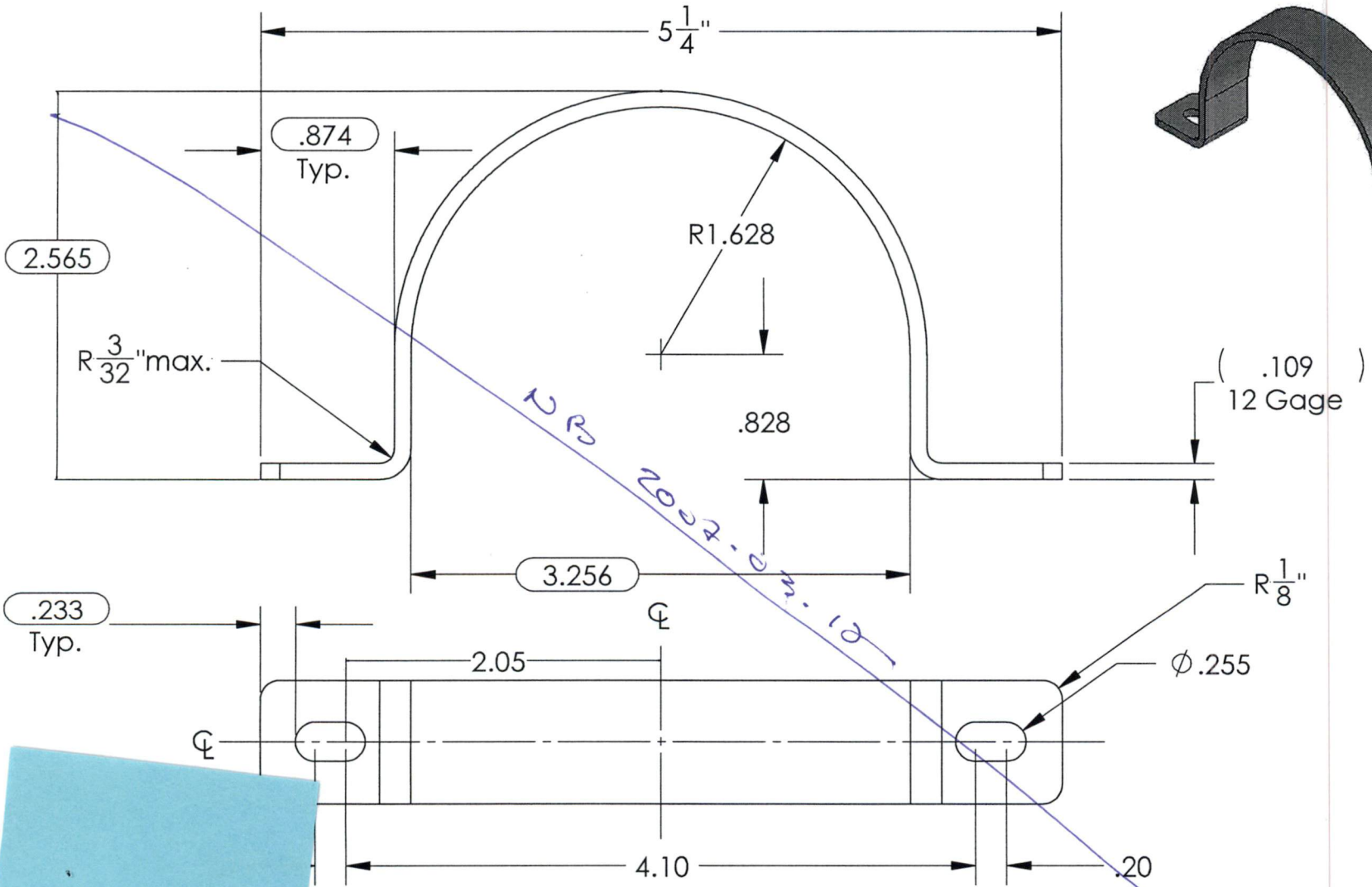
Vanair Inc.
 860, Marie-Victorin
 St-Nicolas, Lévis (Québec)
 Canada, G7A 3S9
 Tél. (418) 561-4512
 Fax. (418) 836-2291
 www.helitowcart.com

TOLERANCES				Title / Titre				Matériel / Material			
X/X	± 1/32"			Bearpaw BP-350 - Pad				UHMW Black			
X.X	± 1/64"			Dessiné par / Drawing by:	Date: (mm/dd/yyyy)	Foliot:		Echelle / Scale:		# Page:	
X.XX	± 0.010"			G.Lapointe	11/20/2006	B		1:4		1 / 2	
X.XXX	± 0.005"			Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Desin # / Drawing #:					
						VNR106					
				Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #:					
				N. Daulton	24.11.2006	314-0018-01					

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TOLERANCES X/X ± 1/32" X.X ± 1/64" X.XX ± 0.010" X.XXX ± 0.005" ANGLES ± 1° Finish ⁶³ ✓				UHMW Black Échelle / Scale: 1:4 # Page: 2 / 2	
Titre / Title: Bearpaw BP-350 - Pad Dessiné par / Drawing by: G.Lapointe Vérifié par / Checker by: S. Dabau Approuvé par / Approved by: S. Dabau				Matériel / Material: UHMW Black Date: 11/20/2006 Format: B Date: 11/20/2006 Dessin # / Drawing #: VNR106 Date: 11/20/2006 Pièce # / Part #: 314-0018-01	
				Rev #: R02 Rev #: B	



10.03.2006

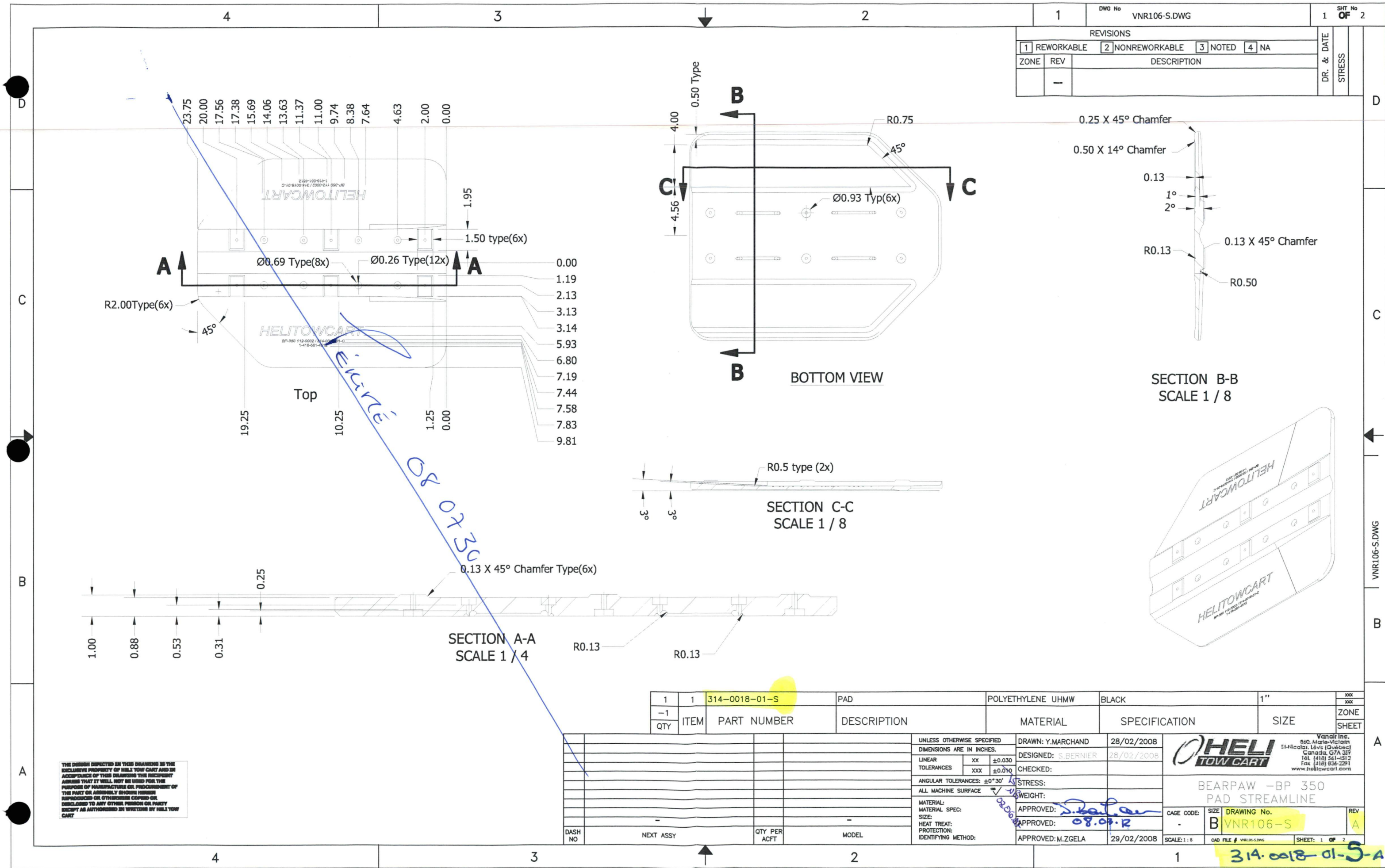


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TOLERANCES		Titre / Title:		Matériel / Material:	
X/X	$\pm 1/32"$	Bearpaw BP-350 - U shaped clip		SST 304 12ga	
X.X	$\pm 1/64"$	Dessiné par / Drawing by:	Date: (mm/dd/yyyy)	Format:	Echelle / Scale:
X.XX	$\pm 0.010"$	G.Lapointe	10/3/2006	A	1:1
X.XXX	$\pm 0.005"$	Vérifié par / Checker by:	Date: (mm/dd/yyyy)	Dessin # / Drawing #:	Rev #:
	Finish			VNR107	1
ANGLES $\pm 1^\circ$		Approuvé par / Approved by:	Date: (mm/dd/yyyy)	Pièce # / Part #:	Rev #:
		N. Barthelemy	2006.11.29	314-0019-15	A

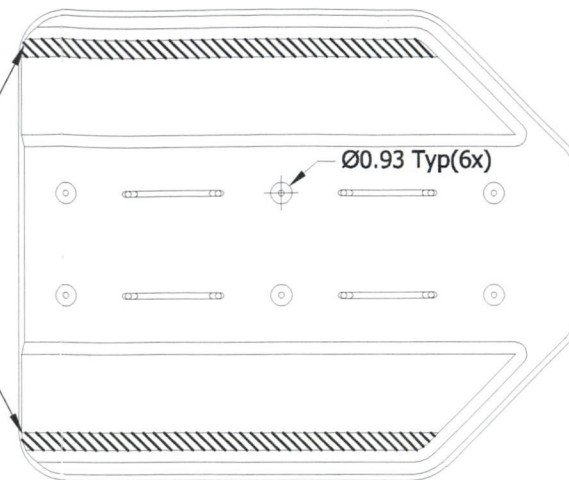
Rev.	Description	Date	By
R01	Initial Issue	29-sept.-06	G.L.



- NOUVEAU PAD -


DR. & DATE	
STRESS	

1. ZONE E = ALL NON-SHADED AREA



BOTTOM VIEW



-1	ITEM	PART NUMBER	DESCRIPTION	MATERIAL	SPECIFICATION	SIZE	ZONE
QTY							SHEET
			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.	DRAWN: Y.MARCHAND	28/02/2008	 <div style="text-align: right;"> Vendair Inc. 660, Marie-Victorin St-Nicolas, Lévis (Québec) Canada, G7A 3S7 Tél. (418) 561-5112 Fax (418) 836-2291 www.heliotowcart.com </div>	
			LINEAR TOLERANCES XX ±0.030 XXX ±0.010	DESIGNED: S.BERNIER	28/02/2008		
			ANGULAR TOLERANCES: ±0°30'	CHECKED:			
			ALL MACHINE SURFACE ✓	STRESS:			
			MATERIAL SPEC SIZE:	WEIGHT:			
			HEAT TREAT PROTECTION:	APPROVED:			
			IDENTIFYING METHOD:	APPROVED:			
				APPROVED: M.ZGELA	29/02/2008		
NEXT ASSY		QTY PER ACFT	MODEL			CAGE CODE: - SIZE: B DRAWING No. VNR106-S REV A	
						SCALE: 1 : 8 CAD FILE # VNR106-S.DWG SHEET: 2 OF 2	

1- Heat Shrink:

- Brand Alpha Wire, Model FIT-221-1. 1"wide, **BLACK** color
- Purchased in 1 meter length.
- Material : Polyolefin. A family of thermoplastics based upon the unsaturated hydrocarbons known as olefins. When combined with butylene or styrene polymers, they form compounds such as polyethylene and polypropylene.

2- Install Shrink:

- Cut Shrink in **6.25"** lengths. Insert into U clips.
- Set U clips on their side on aluminum sheet.
- Heat oven to 350F for 30 min.

Handwritten:
BP350
12/10
2006.11.24

1- Inspecter composantes: (Par Quality System Manager)

Si les lots à utiliser n'ont pas encore été inspectés :

- Utiliser plans d'inspection prescrits. (Voir manuel DHR, section intitulée LN)
- Assigner no de lot "LN-yymmdd-xx". (xx étant le séquentiel).

2- Installer Shrink: (Par Production Manager)

- Utiliser Shrink prescrit :
BP44 : Transparent de largeur 1" en longueurs de 5".
BP350 : Noir en largeur de 1" en longueurs de 6.25"
- Insérer dans U clips à l'aide d'eau savonneuse.
- Chauffer au four 350deg. durant 30 min.. Utiliser papier alum. sur tôle et placer les clips sur leur côté.

3- Effectuer assemblage des kits: (Par Production Manager)

- Assembler les IceBlades (si applicable)
- Insérer toutes les autres composantes, non assemblées, dans des sacs
- Insérer les deux Pads de bearpaws ainsi que les sacs de composantes dans la boîte appropriée
- Bourrer contenu de la boîte de papier protecteur (si applicable)
- Apposer étiquette : BP44 : 273-0001-04 , BP350 : 273-0002-04 sur le côté de la boîte

4- Effectuer assemblage documentaire: (Par Quality System Manager)

- Assembler dans sacs :
 - (1) Instruction d'installation
 - (2) Certificat de manufacturier SH06-24
 - (3) STC Transport Canada
 - (4) STC FAA USA

Handwritten notes:
BP 44 2011.12.10
BP 350 2011.12.10
Sérime

5- Inspecter produit fini: (Par Quality System Manager)

- Utiliser plan d'inspection prescrit. (Voir manuel DHR, section intitulée LNF)
- Assigner no de lot "LNF-yymmdd-xx". (xx étant le séquentiel).
- Effectuer les contrôles prescrits et Enregistrer résultats. Utiliser F40-02 "Release Inspection general"
- Émettre certificat de relâche temporaire pour chaque kit (F40-01 Authorized Release Certificate)

6- Au moment de la vente:

- Émettre certificat de relâche officiel (F40-01 Authorized Release Certificate). (2 copies)
Données électroniques localisées à : Quality System/ Official Records/ Release Certificates
Signer.
- Conserver une copie au DHR, Insérer la seconde dans le sac de documents dans la boîte à expédier.

Handwritten signature: D. Bouchon 2007.11.09



Department of Transport

Supplemental Type Certificate

This approval is issued to:

Helitowcart Inc.
860 Marie-Victorin
St-Nicholas, Lévis, Québec
Canada G7A 3S9

Number: SH06-24

Issue No.: 3

Approval Date: August 17, 2006

Issue Date: July 7, 2011

Responsible Office:

Québec

Aircraft/Engine Type or Model:

See Continuation Sheet Page 2 of 2

Canadian Type Certificate or Equivalent:

See Continuation Sheet Page 2 of 2

Description of Type Design Change:

Installation of Helitowcart BearPaw

**Installation/Operating Data,
Required Equipment and Limitations:**

For the Robinson Models R44 and R44 II Helicopters:

Installation of Helitowcart Bear Paw BP44 is to be performed in accordance with TC approved Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-R44-1000, Revision C dated April 15, 2010, or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions Document: "HTC-314-0011-00-D, BearPaw Model BP44, Installation Instructions - R44".

See Continuation Sheet Page 2 of 2



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.


Jean-Pierre Francoeur
For Minister of Transport

Canada



NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

**Installation/Operating Data,
Required Equipment and Limitations (Cont'd):**

For the Eurocopter (formerly Aerospatiale) AS350 and AS355 Series Helicopters:

Installation of Helitowcart Bear Paw BP350 is to be performed in accordance with TC approved Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-AS350/355-1000, Revision F dated April 8, 2010, or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions Document: "HTC-314-0020-00-E, BearPaw Model BP350, Installation Instructions - AS350/355".

For the Eurocopter EC 130 Helicopters:

Installation of Helitowcart Bear Paw BP130 is to be performed in accordance with TC approved Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-EC130-1000, Revision A dated May 13, 2011, or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions Document: "HTC-314-0031-00-A, BearPaw Model BP130, Installation Instructions - EC 130".

Fleet Eligibility List		
Make	Model	Type Certificate Data Sheet
Robinson	R44	H-97
Robinson	R44 II	H-97
Eurocopter	AS 350 B	H-83
Eurocopter	AS 350 B1	H-83
Eurocopter	AS 350 B2	H-83
Eurocopter	AS 350 B3	H-83
Eurocopter	AS 350 BA	H-83
Eurocopter	AS 350 D	H-83
Eurocopter	EC 130 B4	H-83
Eurocopter	AS 355 E	H-87
Eurocopter	AS 355 F	H-87
Eurocopter	AS 355 F1	H-87
Eurocopter	AS 355 F2	H-87
Eurocopter	AS 355 N	H-87

— End —

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Helitowcart
877A Alphonse-Desrochers
St-Nicolas, Levis, (Québec)
Canada G7A 5K6

Number: Q-SH06-24

Issue No. : 3
Approval Date: May 04, 2011
Issue Date: May 25, 2011

Responsible Office: Quebec

Aircraft/Engine Type or Model: See Continuation Sheet

Canadian Type Certificate or Equivalent: See Continuation Sheet

Description of Type Design Change: Installation of Helitowcart BearPaw

**Installation/Operating Data,
Required Equipment and Limitations:**

Installation Data:

For the R44 Series:

Installation of is to be performed in accordance with TC approved Helitowcart Master Document List HTC-MDL-BP-R44-1000, Revision C dated April 15, 2010 or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Installation Instructions document "314-0011-00-D, BearPaw Model BP44, Installation Instructions – R44" as specified by Helitowcart Inc. Master Document List HTC-MDL-BP-R44-1000.

For the AS350 and AS355 Series:

Installation of is to be performed in accordance with TC approved Helitowcart Master Document List HTC-MDL-BP-AS350/355-1000, Revision F dated April 8, 2010 or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions document "314-0020-00-E, BearPaw Model BP350, Installation Instructions – AS350/355" as specified by Helitowcart Master Document List HTC-MDL-BP-AS350/355-1000.

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

Jean Pierre Francoeur
Aircraft Certification Engineer
For Minister of Transport

Department of Transport

Supplemental Type Certificate

(Continuation Sheet)

For the EC130 Series:

Installation of is to be performed in accordance with TC approved Helitowcart Master Document List HTC-MDL-BP-EC130-1000, Revision A dated May 13, 2011 or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions document "314-0031-00-A, BearPaw Model BP130, Installation Instructions – EC130" as specified by Helitowcart Master Document List HTC-MDL-BP-EC130-1000.

Limitations:

N/A

Required equipment:

N/A

Fleet Eligibility List		
Make	Model	Type Certificate Data Sheet
Robinson	R44	H-97
Robinson	R44 II	H-97
Eurocopter	AS 350 D	H-83
Eurocopter	AS 350 D1	H-83
Eurocopter	AS 350 B	H-83
Eurocopter	AS 350 B1	H-83
Eurocopter	AS 350 B2	H-83
Eurocopter	AS 350 B3	H-83
Eurocopter	AS 350 BA	H-83
Eurocopter	EC 130 B4	H-83
Eurocopter	AS 355 E	H-87
Eurocopter	AS 355 F	H-87
Eurocopter	AS 355 F1	H-87
Eurocopter	AS 355 F2	H-87
Eurocopter	AS 355 N	H-87

----- End -----

Department of Transport

DRAFT
AWAITING APP'D
VERSION
25
2011 06 29

Supplemental Type Certificate

This approval is issued to:

Helitowcart
877A Alphonse-Desrochers
St-Nicolas, Levis, (Québec)
Canada G7A 5K6

Number: Q-SH06-24

Issue No. : 3
Approval Date: May 04, 2011
Issue Date: May 25, 2011

Responsible Office:

Quebec

Aircraft/Engine Type or Model:

See Continuation Sheet

Canadian Type Certificate or Equivalent:

See Continuation Sheet

Description of Type Design Change:

Installation of Helitowcart BearPaw

Installation/Operating Data,
Required Equipment and Limitations:

Installation Data:

For the R44 Series:

Installation of is to be performed in accordance with TC approved Helitowcart Master Document List HTC-MDL-BP-R44-1000, Revision C dated April 15, 2010 or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Installation Instructions document "314-0011-00-D, BearPaw Model BP44, Installation Instructions - R44" as specified by Helitowcart Inc. Master Document List HTC-MDL-BP-R44-1000.

For the AS350 and AS355 Series:

Installation of is to be performed in accordance with TC approved Helitowcart Master Document List HTC-MDL-BP-AS350/355-1000, Revision F dated April 8, 2010 or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions document "314-0020-00-E, BearPaw Model BP350, Installation Instructions - AS350/355" as specified by Helitowcart Master Document List HTC-MDL-BP-AS350/355-1000.

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

Jean Pierre Francoeur
Aircraft Certification Engineer
For Minister of Transport



Department of Transport

Supplemental Type Certificate

This approval is issued to:

Helitowcart Inc.
860 Marie-Victorin
St-Nicholas, Levis, Quebec
Canada G7A 3S9

Responsible Office:

Aircraft/Engine Type or Model:

Canadian Type Certificate or Equivalent:

Description of Type Design Change:

Installation/Operating Data,

Required Equipment and Limitations:

For the Robinson Models R44 and R44 II Helicopters:

Installation of Helitowcart Bear Paw Model BP350 is to be performed in accordance with TC approved Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-R44-1000, Revision NC dated August 8, 2006, or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions Document: "314-0011-00-A, BearPaw Model BP44, Installation Instructions - R44" as specified by Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-R44-1000.

See Continuation Sheet Page 2 of 2

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

Pierre G. Richard
Pierre G. Richard
For Minister of Transport

Canada

Number: SH06-24
Issue No.: 2
Approval Date: August 17, 2006
Issue Date: December 19, 2006
2011 12 10
Perine
DR

061900
WACI0190
DVR - 1064
AA

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

**Installation/Operating Data,
Required Equipment and Limitations (Cont'd):****For the Eurocopter (formerly Aerospatiale) AS350 and AS355 Series Helicopters:**

Installation of Helitowcart Bear Paw Model BP350 is to be performed in accordance with TC approved Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-AS350/355-1000, Revision A dated November 22, 2006, or later Transport Canada approved revision.

The BearPaw must be installed in accordance with Helitowcart Inc. Installation Instructions Document: "314-0020-00-A, BearPaw Model BP350, Installation Instructions - AS350/355" as specified by Helitowcart Inc. Master Document List, Report: HTC-MDL-BP-AS350/355-1000.








Fleet Eligibility List		
Make	Model	Type Certificate Data Sheet
Robinson	R44	H-97
Robinson	R44 II	H-97
Eurocopter	AS 350 B	H-83
Eurocopter	AS 350 B1	H-83
Eurocopter	AS 350 B2	H-83
Eurocopter	AS 350 B3	H-83
Eurocopter	AS 350 BA	H-83
Eurocopter	AS 350 D	H-83
Eurocopter	AS 350 D1	H-83
Eurocopter	AS 355 E	H-87
Eurocopter	AS 355 F	H-87
Eurocopter	AS 355 F1	H-87
Eurocopter	AS 355 F2	H-87
Eurocopter	AS 355 N	H-87

- End -










314-0010-00-H BearPaw Hardware components

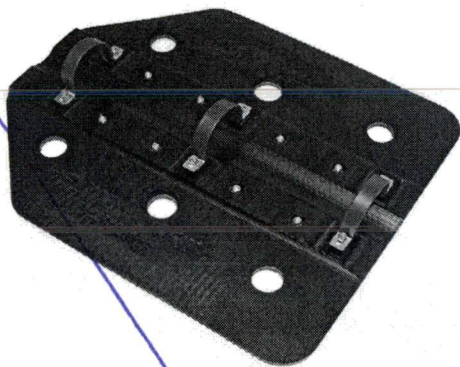
BearPaw Hardware:

w Hardware:		BP44		Quantities per PAIR		BP350	
		HTC : 314-0006-15B		4	HTC : 314-0019-15A		6
		HTC : 314-0007-15B		8	Same		12
AN4-14A	Not shown here				HTC : 261-0001-17A		12
AN4-15A		HTC : 261-0002-17A		4			
AN4-16A		HTC : 261-0003-17A		4			
MS20-365-428		HTC : 262-0001-17A		8	Same		12
AN960-416		HTC : 263-0001-17A		16	Same		24
		1/4"	HTC : 314-0012-01A	4	Same		12
		3/32"	HTC : 314-0014-01A	4			
		1/8"	HTC : 314-0015-01A	4			

Rear Filler block & IceBlade Hardware:

AN4-15A		HTC : 261-0002-17A	4		
MS20-365-428		HTC : 262-0001-17A	4		
AN960-416		HTC : 263-0001-17A	16		
		HTC : 314-0022-01A	2		
	LOW U-Clip (pict not avail)	HTC : 314-0023-15A	2		
MS20-365-428		HTC : 262-0001-17A	8	Same	16
AN960-416		HTC : 263-0001-17A	8	Same	16
		HTC : 263-0005-15A	4	Same	8

Nature of modification : Added Low U-Clip to BP44. increases washers too. Changed 13A bolt for 15A bolt at Rear Filler block.



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TOW CART

By Vanair

☐ BP350 BearPaw (2)



877A Alphonse-Desrochers, Saint-Nicholas, Levis, Quebec, Canada G7A 5K6 / Made in Canada

www.helitowcart.com

+1.418.561.4512

info@helitowcart.com

htc 273-0002-04-C



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By Vanair

☐ BP350 BearPaw (2)



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☐ BP350 BearPaw (2)



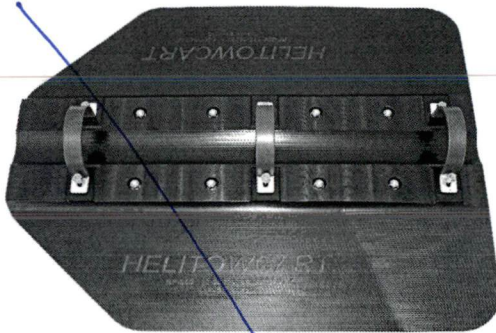
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☐ BP350-S BearPaw (2)

☐ OIB IceBlades (8)

860 Marie-Victorin, Saint-Nicholas, Levis, Quebec, Canada G7A 3S9 / Made in Canada

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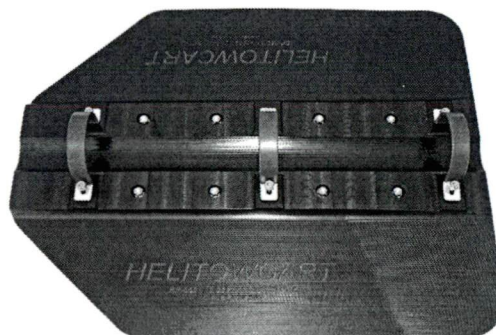
☐ BP350-S BearPaw (2)

☐ OIB IceBlades (8)

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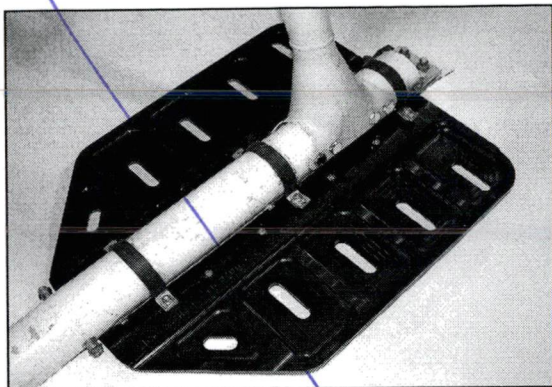
☐ BP350-S BearPaw (2)

☐ OIB IceBlades (8)

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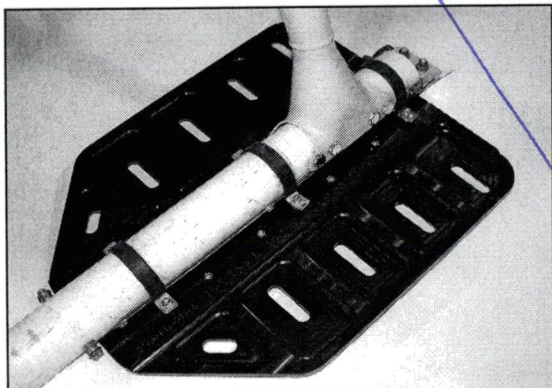
☐ BP350 BearPaw (2)

☐ OIB IceBlades (8)

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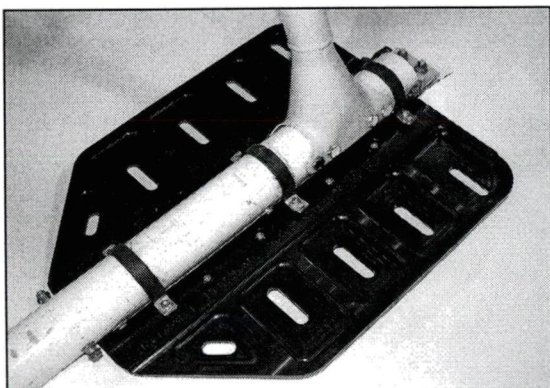
☐ BP350 BearPaw (2)

☐ OIB IceBlades (8)

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By Vanair

☐ BP350 BearPaw (2)

☐ OIB IceBlades (8)

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N. Barbeau 2006.11.24



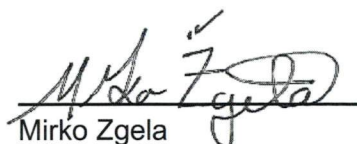
Master Document List

Helitowcart

Eurocopter Model AS 350/355 Series Helicopters Installation of BearPaw Model **BP350**

Report: **HTC-MDL-BP-AS350/355-1000 (Rev C)**

APPROVED BY:


Mirko Zgela

DATE: FEBRUARY 28, 2008

Design Approval Representative DAR #310

Revision	Revision Date	Revision of Entry	Entered by
A	Nov 22, 2006	Initial issue	N/A
B	Jan 28, 2007	Revision performed to the Installation Instructions (Doc # HTC-314-0020-00-B).	M.Z.
C	Feb 28, 2007	Addition of streamline pad configuration.	M.Z.

 08.03.08



1.0 MASTER DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
AAC-CPL-BP-AS350/355-1000	Compliance Plan – Eurocopter Model AS350/355 Series Helicopters – Installation of BearPaw Model BP350	NC	DAR 310	Nov 22, 2006
HTC-314-0020-00-C	BearPaw Model BP350 – Installation Instructions – AS350/355 Series Helicopters	C	DAR 310	Feb 28, 2008
AAC-STR-BP-AS350/355-1000	Structural Substantiation – Helitowcart Inc. BearPaw Model BP350	NC	DAR 310	Nov 20, 2006
AAC-FTR-C-GZNC	Simple External Modification – Applicant's Flight Test Plan/Report	NC	DAR 310	Nov 21, 2006

2.0 MASTER DRAWINGS

Drawings #	Title	Revision Status	Approval by	Date
112-0002-00	BearPaw BP350 - Assembly	B	DAR 310	Nov 20, 2006
112-0002-00-S	BearPaw BP350 – Assembly Streamline	A	DAR 310	Feb 28, 2008
VNR084	BearPaw – Iceblade	R01	DAR 310	Apr 24, 2006
VNR085	BearPaw – Iceblade Threaded Rod	R01	DAR 310	Apr 24, 2006
VNR086	BearPaw – Iceblade Assembly	R01	DAR 310	Apr 24, 2006
VNR106	BearPaw BP350 - Pad	R02	DAR 310	Sept 26, 2006
VNR106-S	BearPaw BP350 – Pad Streamline	R01	DAR 310	Feb 28, 2008
VNR107	BearPaw BP350 – U Shaped Clip	R01	DAR 310	Sept 29, 2006
VNR089	Bearpaw – Slotted Clip Support	R04	DAR 310	July 31, 2006
VNR099	Filler Block 1/4"	R01	DAR 310	Aug 8, 2006

3.0 REFERENCE DOCUMENTS

Document #	Title	Revision Status	Approval by	Date
314-0009-01-A	Ultra High Molecular Weight Polyethylene – Typical Properties	A	N/A	May 24, 2006
314-0008-01-A	Propriétés du UHMW TIVAR	A	N/A	May 24, 2006
314-0017-05-A	Heat Shrink Specifications	A	N/A	Sept 6, 2006

4

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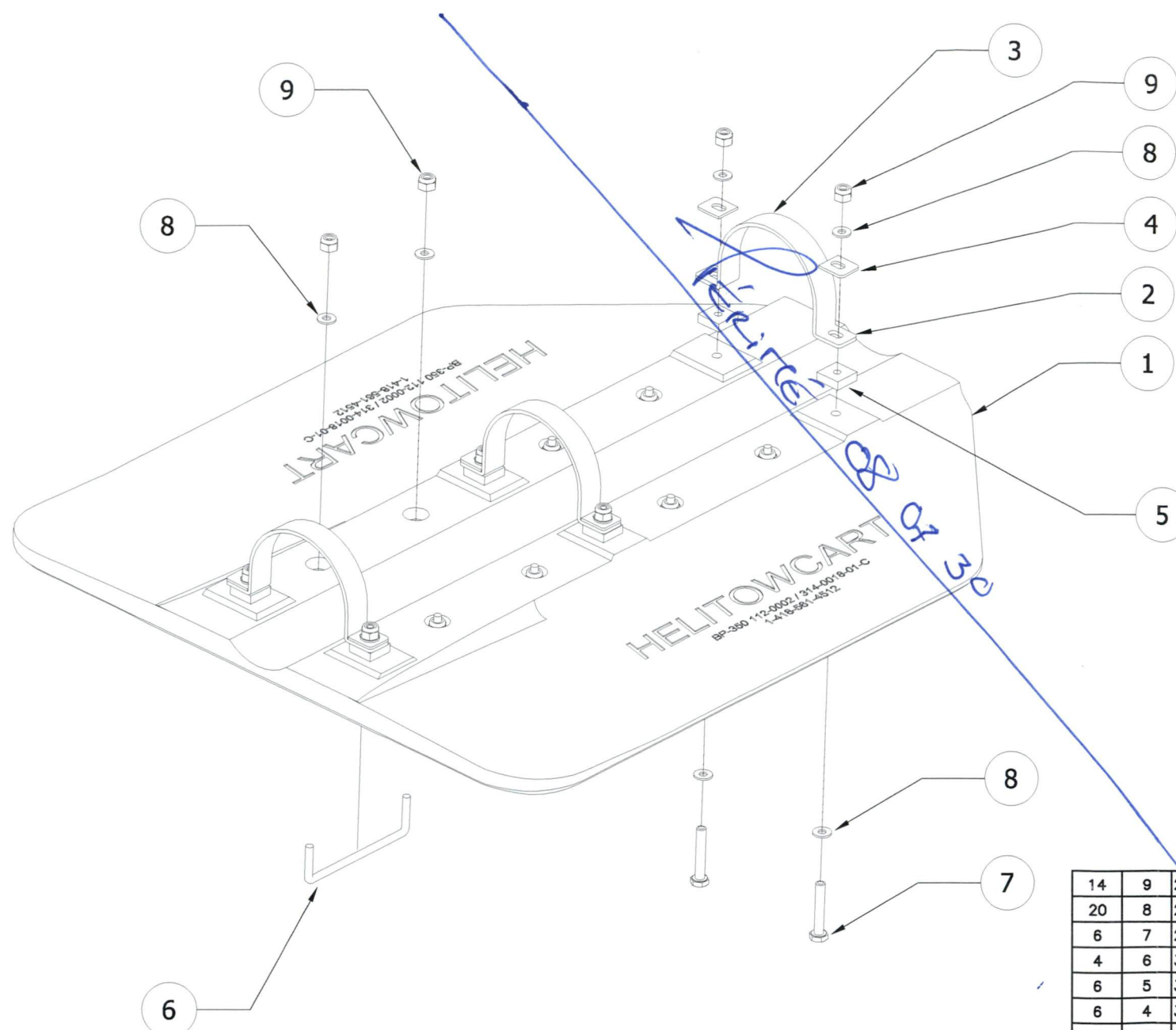
DWG No 112-0002-00-S.DWG

1 OF 1

REVISIONS

1 REWORKABLE 2 NONREWORKABLE 3 NOTED 4 NA

ZONE REV DESCRIPTION

DR. & DATE
STRESS

NOTE: ICEBLADE ASSEMBLY, ITEM 6, CAN
BE OMITTED FROM INSTALLATION
(OPTIONAL)

14	9	262-0001-17-A	NUT MS20365-428			1/4-28	XXX
20	8	263-0001-17-A	WASHER AN960-416			1/4	XXX
6	7	261-0001-17-A	BOLT AN4-14A			1/4-28 UNF	XXX
4	6	314-0005-15-A	ICEBLADE ASSEMBLY				XXX
6	5	314-0012-01-A	FILLER BLOCK			1/4"	XXX
6	4	314-0007-15-B	SLOTTED CLIP SUPPORT				XXX
3	3	314-0021-01-A	SHRINK			1" x 6 1/4"	XXX
3	2	314-0019-15-A	U SHAPED CLIP				XXX
1	1	314-0018-01-S-A	PAD STREAMLINE	POLYETHYLENE UHMW	BLACK	1"	XXX
-1	QTY	ITEM	PART NUMBER	DESCRIPTION	MATERIAL	SPECIFICATION	SIZE
							ZONE
							SHEET

THE DESIGN IMPACT OF THIS DRAWING IS THE
EXCLUSIVE PROPERTY OF HELI TOW CART AND IN
ACCEPTANCE OF THIS DRAWING THE RECIPIENT
AGREES THAT IT WILL NOT BE USED FOR THE
PURPOSE OF MANUFACTURE OR PRECISEMENT OF
THE PART OR ASSEMBLY SHOWN HEREIN
REPRODUCED OR OTHERWISE COPIED OR
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EXCEPT AS AUTHORIZED IN WRITING BY HELI TOW
CART

DASH NO	NEXT ASSY	QTY PER ACFT	MODEL	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. LINEAR TOLERANCES: XX ±0.030 XXX ±0.010 ANGULAR TOLERANCES: ±0°30' ALL MACHINE SURFACE MATERIAL: MATERIAL SPEC: SIZE: HEAT TREAT: PROTECTION: IDENTIFYING METHOD:	DRAWN: Y.MARCHAND 28/02/2008 DESIGNED: S.BERNIER 28/02/2008 CHECKED: STRESS: WEIGHT: APPROVED: J. Bernier 08.03.12 APPROVED: M.ZGELA 29/02/2008	BEARPAW -BP 350 ASSEMBLY CAGE CODE: - SCALE: 1:4 DRAWING No. 112-0002-00-S SHEET: 1 OF 1	Vanair Inc. 860, Marie-Victorin 5445, St. Lévis (Québec) Canada, G7A 3S7 Tel. (418) 561-4512 Fax (418) 836-2291 www.helitowcart.com
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STREAMLINE

112-0002-00-S.DWG

B

A

- Nouvelle Pao -